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The OIL AND GAS JOURNAL

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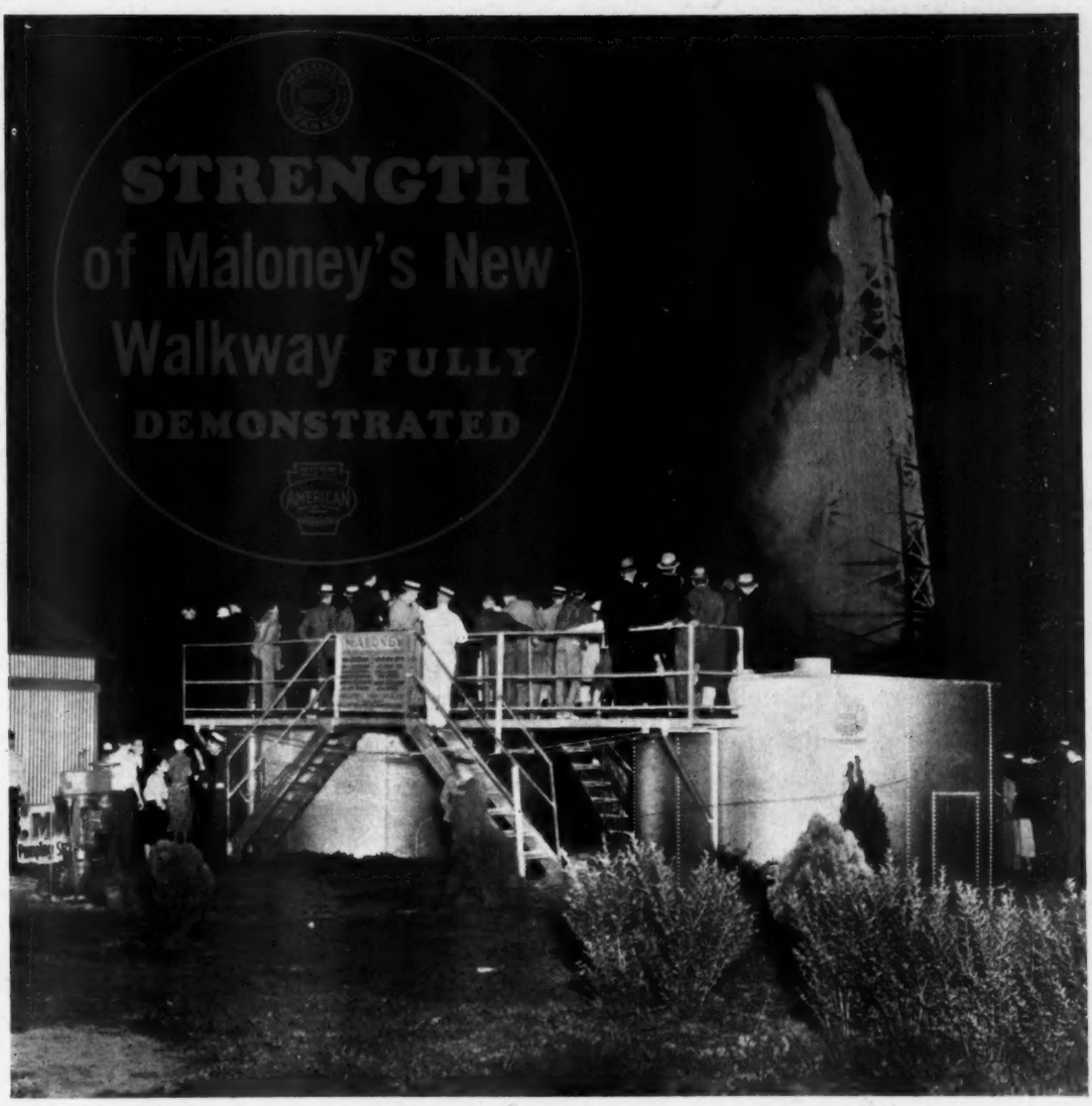

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Mounting Production Unsettles Markets But Way Is Open to Curb Practices Causing Trouble

By ANDREW M. ROWLEY

ONCE again human nature and failure of politicians to enforce crude oil proration regulations have caused the petroleum industry to enter its main consuming period in an unsettled condition with markets weak and many rumors of impending crude oil price reductions. Selfishness on the part of a small minority of producers and refiners who will not abide by curtailment orders and who seek to take advantage of efforts being made to stabilize the refined oil market has complicated the problem of those trying to hold production of both crude oil and gasoline to consumer requirements. The substantial gain registered this year in consumption has been a big factor in maintaining markets at present price levels but it must be realized production is reaching a dangerous point.

Failure of Congress to pass the crude oil production control bill will not result in the chaotic conditions so freely predicted, even in high quarters. Many in the industry are still doubtful whether greater benefit would ultimately accrue to the business through orderly production in East Texas or through "blowing off the lid" there. The latter course, naturally, would put many of the little operators out of business and close up a great number of the small refineries in that section but many of these are responsible for present conditions.

The National Coordinator for the refining industry is in East Texas with a plan seeking co-operation of refiners there. Orderly production and marketing of gasoline certainly will insure a far greater return and a reasonable profit on operations, whereas no one can make any money on present refined oil prices. There is some feeling the Congressional committee which will investigate conditions in the business, from headquarters in East Texas, might act as a deterrent factor on too flagrant violations in East Texas. And there is talk of a special session of the Texas legislature to provide for an appointive oil and gas commission instead of the present elected Railroad Commission. In other words, the proposed oil control bill was merely one means of going after recalcitrants. There are many other ways of stopping these practices if the industry and the Federal government make a determined effort to enforce existing rules and laws.

The Federal revenue act, effective midnight June 9, will permit the government to check producing and refinery operations and violations of Federal revenue laws in the past have resulted in many extended vacations in government institutions.

Field operations continue at a high level indicating faith in the future on the part of companies expecting to remain in business for some years to come. These companies are anxious to establish additional crude oil reserves.

Crude Oil Production in the United States

Estimated daily average production for the week ending June 16, a comparison with previous week and the Federal allowables follow:

		Federal allowable	
	June 16	June	June 9
Oklahoma—			
Oklahoma City	217,290	.....	228,310
Seminole-St. Louis	108,880	.....	93,485
Remainder of State	230,430	.....	227,140
Total Oklahoma	556,540	511,700	548,935
East Texas—			
Lathrop	233,730	.....	241,110
Kilgore	169,890	.....	175,260
Joiner	151,590	.....	156,350
Total East Texas	555,210	.....	572,720
West Texas	138,655	.....	138,465
North Central Texas	90,813	.....	89,735
Texas Panhandle	57,747	.....	54,811
East Central Texas	51,850	.....	51,850
Gulf Coast—Texas	168,905	.....	170,405
Southwest Texas	48,245	.....	47,144
Total State of Texas	1,111,425	1,032,300	1,125,130
Kansas	130,275	130,300	127,195
North Louisiana	25,325	.....	25,425
Gulf Coast—Louisiana	65,255	.....	65,815
Total Louisiana	90,580	83,000	91,240
Arkansas	31,255	32,800	30,890
Eastern Fields (except Michigan)	102,000	108,900	101,250
Michigan	30,290	32,800	32,900
Rocky Mountain area	92,290	96,000	92,140
California—			
Santa Fe Springs	42,850	.....	43,250
Long Beach	73,500	.....	69,250
Mountain View	6,300	.....	5,500
Elwood	11,500	.....	9,250
Kettleman Hills	58,250	.....	55,750
Remainder of State	324,600	.....	314,000
Total California	517,000	500,300	497,000
Total United States	2,661,655	2,528,300	2,646,680

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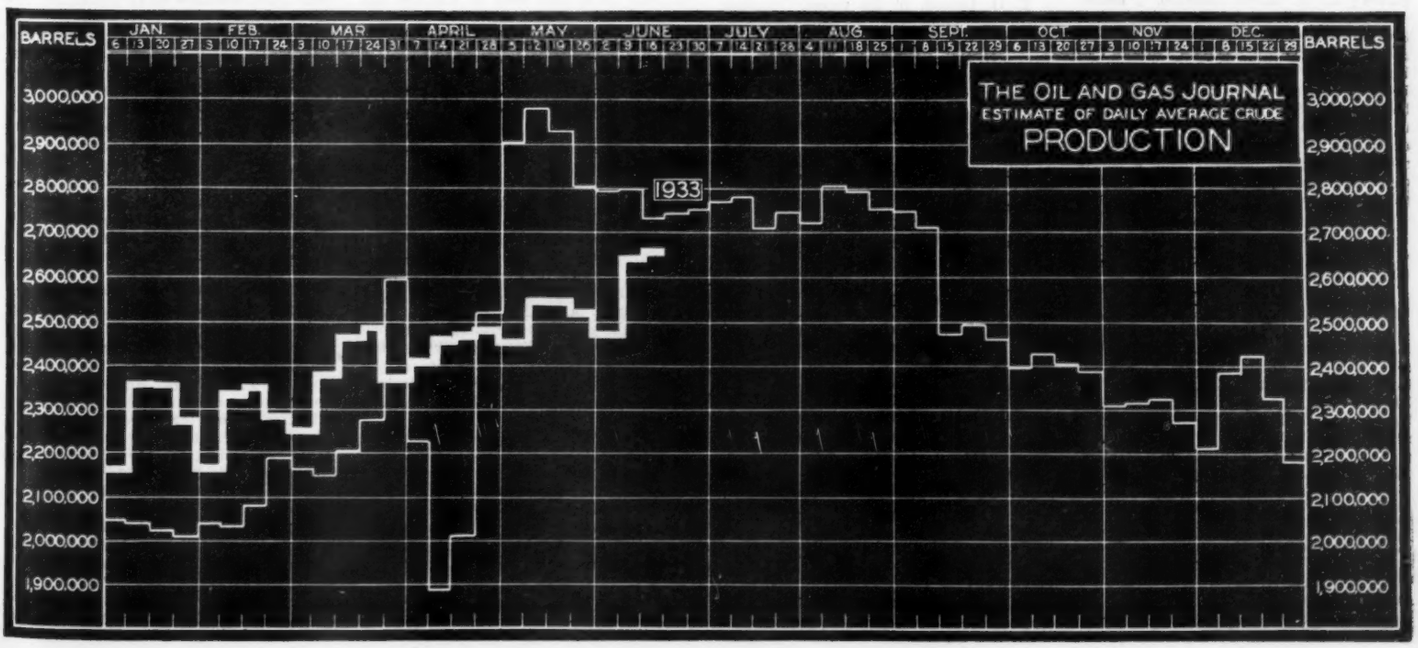


Pennsylvania Grade Crude Association Meets in Eleventh Annual Session at State College

By ROBERT C. CONINE

STATE COLLEGE, Pa., June 16.—If anything remained to establish the value of the Pennsylvania Grade Crude Oil Association to the region, this was accomplished at the eleventh annual meeting of the organization here this week. From the opening address by Fayette B. Dow, vice president and general counsel, outlining the current situation in Washington, to the closing presentation by T. O. Grisell, executive secretary, who traced the region's future, the discussion teemed with facts of vital interest to operators who are advancing rapidly from outmoded methods and equipment to rivalry with the most progressive of the industry.

President Zook's Address

Ralph T. Zook, the retiring president, in his address, showed the relationship of the region's oil industry to that in other sections of the country. The price for gasoline, he said, is set by competitors in the Mid-Continent and on the Atlantic seaboard. Kerosene, which should be sold as a premium product by refiners of the grade region, is marketed on a price competition basis. "Our lubricants," Mr. Zook said, "obtain a premium price, but only to a certain extent and that ceiling has been reached under present economic conditions. If wholesale prices of Pennsylvania lubricants are increased materially the result will be a loss of our markets, and the loss will be permanent.

"A running summary of the different products based on today's prices for Bradford district crude," Mr. Zook said, "shows that the normal price for 25 pour test 140-150 viscosity 210 bright stock is 27 cents per gallon. Viscous neutral 25 pour, 200 @ 70° F., 24 cents per gallon; steam refined, 600 filterable, 18 cents per gallon; U. S. Motor gasoline, 7 cents; 45° gravity kerosene, 5.4 cents; 36-40 fuel oil, 4 cents. The prices for neutrals and gasoline today are therefore out of line unless a new price relationship has been established. This will probably not be known until it is seen whether or not the demand for 10W and 20W motor oils continues. We are 13 cents too high on the 2.7 gallons of neutral from a barrel of crude, and 13 cents too low on the gasoline content.

"The percentage of shipments of both domestic and export which have been supplied by Pennsylvania has increased from 14 per cent in 1929 to over 20 per cent in 1933. This 20 per cent figure has been questioned by some not familiar with the Pennsylvania industry and as a matter of record I submit the following for shipments during 1933: Steam refined, 1,156,799 bbls.; viscous neutral, 1,597,511 bbls.; bright stock, 2,520,105 bbls.; total, 5,274,415 bbls. Domestic demand during 1933 was 17,066,000 bbls., plus 8,218,000 bbls. export, or a total of 25,284,000 bbls.," Mr. Zook said.

Stripper Wells

William J. Brundred, Oil City, discussing the problems of the stripper well operators, said that consumer demand in the aggregate is influenced little by changing prices and represents a definitely limited volume. Because of overproduction of crude, overexpansion of refining capacity, and overexpansion of retail outlets, destructive price competition the consumer has benefited at the expense of the industry, particularly the producing end of the business. He pointed out that while it is urged that producers in the fields south of Bradford can cut their costs by modernizing their equipment, three years of depressed conditions have left them without funds for rehabilitation. Mr. Brundred presented cost data showing that higher prices for crude oil are imperative in the stripper areas, and said that it is up to the refiners to advance prices of refined products.

Mr. Grisell's Paper

T. O. Grisell, in his paper, "Looking Forward," stated the two important considerations for the region's future prosperity to be an adequate supply of crude oil and continually improved refining technique. A third requirement is real merchandising that will net the required prices, dispose of volume and protect the future. About 50 years' supply of crude is available from the region's reserves; the basic research program conducted at Pennsylvania State College under auspices of the association advances not only refining technique, but also furthers modernization in production methods. While the intrinsic values are maintained technologically, the advertising program conducted by the association and the refiners protects the idea value of grade lubricating oils and accounts for the steadily increasing demand for these premium priced products, Mr. Grisell said.

Dean Edward Steidle, of the school of mineral industries, Pennsylvania State College, discussed basic problems in the conservation and future production of Pennsylvania Grade crude oil in a paper published on Page 51 of this issue of The Oil and Gas Journal.

Technical Sessions

The keynote of the technical sessions was struck by Dean F. C. Whitmore, of the school of chemistry and physics, who said that the advances which have been made in the great coal tar industry could be paralleled in the petroleum industry. "We do not know the facts of petroleum as those of benzol are known," he said, "but there is no reason why the complicated mixtures of hydrocarbons we know as crude oil and its products can not be reduced to intimate understanding. When this is done, utilization of petroleum may match that of coal tar, which supplies some 200 pure substances and from which are derived more than 200,000 useful compounds ranging from delicate perfumes to the most powerful explosives."

"Solvents and the Pennsylvania Oil Industry" was discussed by W. B. McCluer, of the petroleum refining laboratory of the college, in a paper published on Page 79 of this issue of The Oil and Gas Journal.

Dr. M. R. Fenske, director of the petroleum refining laboratory, discussed "Oil Tests and Their Relation to Pennsylvania Lubricants." The Saybolt viscosity, Doctor Fenske said, is not a true viscosity of the oil and while a second or two appears to make little difference outside the engine, under operating conditions a 38-second oil may differ as much as 17 per cent from a 40-second oil, Saybolt viscosities. Other tests in common use are similarly impossible to correlate with the results of actual road test. As a means of throwing some light on a more fundamental analysis, Doctor Fenske said, a method has been developed in the petroleum refining laboratory whereby an oil is literally taken apart into fractions and the properties of the fractions measured by specially devised indexes. These measuring sticks he listed as follows:

Viscosity index: Relating to the slope of the temperature-viscosity curve.

Boiling point index: The relationship between the 50 per cent boiling point at 10 mm. of mercury absolute pressure and the viscosity at 100° F. of a narrow cut of oil. The index was devised to express volatility more accurately than by the standard flash and fire tests.

Optical index: Pertains to the chemical makeup of the oil and is obtained from its refractive index at 68° F. and its 50 per cent boiling point at 10 mm. absolute pressure mercury.

Engler index: Devised to determine accurately the type of neutral used in blending motor oils.

Testing Lubs

H. A. Everett, head of the department of mechanical engineering, discussed the testing of lubricating oils in automobile engines under service conditions. A project is under way in Mr. Everett's department to correlate data obtained from customary laboratory tests with actual performance on the road. Two factors have been taken as of chief importance to consumers: the amount of oil used, and the engine wear. For any given oil, according to the dean, these test quantities are influenced by the following: engine type, engine speed, load, mechanical condition, position, intermittence of operation, weather, fuel, temperatures maintained in circulating water, temperatures maintained in inlet manifold, air velocity by breather, and air-fuel ratio.

The testing installation consists of a battery of four automobile engines, of the same character and all obtained new. All conditions of operation are the same for the four engines. After each run the cylinder heads are taken off and photographs taken of the piston and combustion chambers, and then the carbon is removed and weighed. Oil consumption is determined by measuring the level in a cylindrical sump which is detached from the engine. Wear is determined by chemical analysis of the lubricating oil for iron contamination. The exhaust gas is also tested for iron content.

Dean R. L. Sackett, of the school of engineering, discussed Diesel engine fuels. He said that the Diesel engine exceeds in efficiency the steam engine by 33 per cent, and the gasoline engine by 14 per cent. The engineering experiment station at the college is preparing to carry on a research in Diesel fuels and the program includes a study of the design of high-speed Diesel engines in order to discover the characteristics that make them least sensitive to fuel qualities, and an investigation of petroleum fractions for ignition qualities and to determine the factors which improve a fuel or harm it. Another important field for research covers the field of lubrication to meet requirements for higher pressures, higher temperatures and more complex conditions of service and operation.

Marketing problems of the Pennsylvania region operators were discussed by I. H. Shearer, sales manager of Kendall Refining Co., and Jack Nourse, president of Nourse Oil Co. of Kansas City.

T. P. Thompson, Jr., Bradford, Elected President

STATE COLLEGE, Pa., June 16.—T. P. Thompson, Jr., Bradford, was elected president of the Pennsylvania Grade Crude Oil Association at the close of the organization's eleventh annual convention here. Mr. Thompson succeeds Ralph T. Zook, also of Bradford, who expressed a desire to retire from the office he has held for two years. Mr. Zook, a member of the Planning and Coordination Committee under the oil code, is devoting a considerable part of his time to guarding the interests of the grade region in Washington.

Other officers elected were Fayette B. Dow, vice president and general counsel; John A. Beck, Butler, vice president; E. M. Lyons, Philadelphia, recording secretary; T. O. Grisell, Oil City, executive secretary; Sam Messer, Oil City, treasurer, and Hamilton W. Smith, Los Angeles, assistant secretary. The board of directors was enlarged to 28 with the addition of William J. Brundred, Oil City; W. F. Clinger, Warren, and T. P. Thompson, Jr., Bradford. R. E. Dunham, Conewango Refining Co., and J. T. McCoy, Tide Water Oil Co., were added to the technical committee.

Directors re-elected were: Forest B. Dorn, Otto Koch, Ralph T. Zook, Earl C. Emery, and Richard M. Haskell, all of Bradford. F. E. Richart, Wellsville, N. Y.; D. J. Sweeney, Buffalo; C. L. Suhr, Sam Messer and E. C. Breene, Oil City. Harry A. Logan and Harry L. Lewis, Warren. John A. Beck, Butler; David B. McCalmont, Franklin; John McCoy, Marietta, Ohio; J. A. Dinsmoor, St. Marys, W. Va.; E. M. Craig, Freedom; J. P. Herrick, Olean, N. Y.; Charles A. Huff, Columbus, Ohio; H. D. Atha, Logan, Ohio; Noel Robinson, New York City; N. H. Weber, Chicago; Richard T. Eastell, Pittsburgh; E. M. Lyons, Philadelphia and Fayette B. Dow, Washington.

PIPE LINE TAX HEARING

AUSTIN, Tex., June 18.—Court contests of the validity of the new law placing pipe line companies under the intangible assets tax law were forecast when H. P. Edwards, state tax commissioner, set for hearing the preliminary valuations found for the various corporations, the aggregate of which is approximately $100,000,000 for all classes of pipe lines.

Letters to Edwards and the intangible assets tax board were filed by the Sun, Yount Lee, Atlantic and other companies attacking the law as void and unconstitutional. It was further asserted that the preliminary intangible valuations are not fairly equalized, that the amounts are conflicting and that the apportionment of the tax is illegal.

Congressional Investigating Committee Named; Representative Dies, Texas, Chosen Counsel

By HUGH D. MALLON
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., June 19.—The oil situation is to be investigated by a subcommittee of the House Committee on Interstate and Foreign Commerce during the congressional recess. The subcommittee will conduct inquiries in the various fields, probably beginning with Texas. Rep. William P. Cole, Jr., of Maryland, who offered the resolution for the investigation, will be chairman of the subcommittee of five members, the others being Representatives Samuel B. Pettengill of Indiana, Edward A. Kelly of Illinois, Carl E. Mapes of Michigan and Charles A. Wolverton of New Jersey.

Representative Martin Dies, of Orange, Tex., will be counsel for the investigating subcommittee. In a speech in the House on the control bill, Mr. Dies said:

"Mr. Speaker, I have one of the largest oil producing and refining districts in the United States. I have independents in my district as well as major oil companies. May I say to the House that the number of independents that have written me shows that in the State of Texas, in my judgment, the majority of the independents want legislation. But it is not a question of what the independents want or what the major oil companies want. It is a question of what shall be the policy of the United States Government in reference to the conservation of a great natural resource.

Ruthless Waste

"In the State of Texas I have seen oil wells burning by the day. I have seen oil running down the ditches. There has been wanton and ruthless waste of natural resources in the United States. We at one time were a great timber country. They denuded us of our forests, wasting three-fourths of the timber.

"Getting to this resolution, I regret that we did not get legislation this session, as recommended by the President, but that is neither here nor there. This is a simple proposition of investigating fairly and impartially all sides of this question. A committee appointed as provided in the resolution, in my judgment, will be helpful and may be able to prevent a collapse in the industry. I am convinced that unless something is done inside of 30 days the price of oil is going to decline. The pay rolls of the oil industry increased $289,000,000 a year under the oil code. If the price of oil goes to 5 cents a barrel, that means unemployment, and bankruptcy to the small producing companies of this country, and it also means unemployment to the four or five hundred thousand coal miners in the United States, because the coal industry cannot possibly compete with 5-cent oil."

Mr. Pettengill, one of the members of the investigating subcommittee, in the same debate said:

"Mr. Speaker, I come from a congressional district that does not have an oil well in it. I think I reflect the views of every member of the committee when I say that our action is not to be interpreted that we have passed upon the merits of the Disney bill, either for or against, but simply that the jury is not yet ready to report a verdict and wants further information before it decides whether it should do so or not, one way or the other.

"We felt that this resolution for the purpose of appointing a committee of inquiry to go down there, would act as a deterrent upon the illegal, bootleg production of oil; that it would be a club behind the door; that it would be notice to the bootlegging, illegal hot-oil artists, if there are any down there, that Congress will act next January if they do not behave."

The last chance for action on the administration oil bill was dissipated Monday when Speaker Rainey announced he would not permit the measure to be called up under suspension of rules unless the House Interstate Commerce Committee gave its approval.

The house committee having disapproved the bill, its investigating subcommittee began the work of mapping out plans for the interim investigation of the oil situation.

Defeat of Control Bill

Defeat of the administration's oil control bill in the House is laid directly to the political aspirations of members of Congress, plus the arguments of an extremely active lobby against the measure and the vociferous clamor of a few individuals.

Rep. Sam Rayburn, of Texas, chairman of the House Committee on Interstate and Foreign Commerce, was requested by President Roosevelt to allow his committee to consider the bill. As a result of this request the committee took up the measure and, by a vote of 12 to 5, decided to table it for this session of congress and report a resolution calling for the appointment of a special committee to investigate the oil industry and ascertain the need for legislation of this type.

Discussion in the House

Representative Cole, of Maryland, a member of the committee, introduced House Resolution 441 and House Resolution 442 in that body on Thursday. These measures came up for consideration Friday during the night session of the House and the investigation provided for was approved by a vote of 220 to 36, with 173 members not voting.

Mr. Cole opened the discussion of the resolution with the statement that it represented the unanimous decision of the committee. "The question has been asked, and I think properly so," he continued, "why the Disney bill was not reported out of this committee. We are dealing in this subject with the second largest industry in the United States, one of tremendous consequence. Eighteen states are definitely affected as producing states, not to say anything of the great consuming public. The proponents of the bill, as well as the opposition, appeared in the hearings. I think I can say for every member of the Committee on Interstate and Foreign Commerce, which has presented to this House during the present session six of the major bills which you have approved, working almost day and night, that if they had believed the testimony presented to them was conclusive to have this Congress adopt as a policy the legislation set forth in the Disney bill, they would have done so. The committee, in executive session, decided not to report the Disney bill, but in lieu thereof to incorporate into a resolution almost the identical language found in the statement of policy in the Disney bill, and the committee to which this legislation has been referred to make inquiry into it and report back to the next congress not only its findings, but definite legislation on the subject."

Declaring that failure to pass the oil control legislation would mean 25-cents-a-barrel oil, Representative Blanton, of Texas, said, "When that happens it will put out of employment in the various oil fields 200,000 men, heads of families, who are now making an honest living for their wives and children." Mr. Blanton said that 95 per cent of the independent oil men of Texas are for the bill.

The assertion that the Interstate and Foreign Commerce Committee had not had sufficient time to consider this legislation was quickly disposed of by Representative McFarlane, of Texas, who said the Mines and Mining Committee wanted this legislation and "would have been pleased to have had it referred to their committee if the Interstate and Foreign Commerce Committee would have waived their right to consider it."

Mr. Rayburn concluded the discussion of the resolution, stating that he had no personal interest in the resolution, and that he would not accept membership on the committee to conduct the investigation. He said that even if the oil control bill had been passed by the house, it would not have become law because there was no chance for it to pass the Senate at this session.

Text of Resolution

The text of the resolution passed as follows:

"H. Res. 441

"Resolved, that the Committee on Interstate and Foreign Commerce, as a whole or by subcommittee, is authorized and directed to investigate (1) the production, importation, storage, transportation, refining, purchase, and sale of petroleum and its products for the purpose of determining whether there is an excessive supply of petroleum and its products; whether such excessive supply, if it exists, injuriously affects commerce in petroleum and its products and has the effect of rendering unprofitable the operation of wells of small but settled production and will cause their abandonment before the maximum economic yield is obtained; whether premature extraction of petroleum resources, induced by absence of restrictions upon the quantity which may move in commerce, results in waste and inferior uses; whether restrictions should be placed upon the quantities of petroleum and its products which may move in commerce when an excessive supply exists, and, if so, whether such restrictions should regulate and co-ordinate commerce in petroleum and its products among the several states and with foreign nations, with fair and equitable apportionment among the states and among different operators and sources of supply; and whether commerce in petroleum and its products is of such a nature that it may be regarded as a unit for the purpose of establishing quotas irrespective of whether transactions are interstate or intrastate, or whether exportation or importation is involved; and (2) all other questions in relation to the subject of regulating commerce in petroleum and its products.

"The committee shall report to the House (or to the Clerk of the House if the House is not in session) during the present Congress the results of its investigation together with such recommendations for legislation as it deems advisable.

"For the purpose of this resolution the committee, or any subcommittee thereof, is authorized to sit and act during the present Congress at such times and places whether or not the House is sitting, has recessed, or has adjourned, to hold such hearings, to require the attendance of such witnesses and the production of such books, papers and documents, and to take such testimony, as it deems necessary. Subpoenas shall be issued under the signature of the chairman of the committee or any member designated by him, and shall be served by any person designated by such chairman or member.

(Continued on Page 26)

Administrator's Report on Crude Stocks

Stocks of domestic and foreign crude petroleum at the close of the week ended June 9 totaled 343,201,000 bbls., an increase of 80,000 bbls. over the total of 343,121,000 bbls. on hand at the end of the preceding week, Harold L. Ickes, Secretary of the Interior and administrator of the code of fair competition for the petroleum industry, announced today. This slight increase, which followed an increase of 2,800,000 bbls. during the previous week, comprised an increase of 107,000 bbls. in stocks of domestic crude oil and a decrease of 27,000 bbls. in foreign crude stocks.

Current reports of the industry indicate that crude oil production for the week ended June 9 averaged approximately 2,600,000 bbls. daily, an increase of about 100,000 bbls. over the previous week. Total imports of crude were 972,000 bbls. as compared with 649,000 bbls. for the previous week. Daily average runs to stills for the week ended June 9 were 2,450,000 bbls. as compared with an average of 2,270,000 bbls. for the previous week.

CRUDE PETROLEUM STOCKS REPORTED BY COMPANIES HOLDING 100,000 BBLS. OR MORE

Grade of crude oil—	Stocks held by reporting companies June 2, 1934 (bbls.)	Stocks held by reporting companies June 9, 1934 (bbls.)	Change from June 2, 1934 (bbls.)
Pennsylvania Grade	4,822,000	4,744,000	—78,000
Other Appalachian, including Ky.	1,252,000	1,224,000	—28,000
Lima—N. E. Indiana—Michigan	1,613,000	1,606,000	—7,000
Illinois—S. W. Indiana	11,308,000	11,255,000	—53,000
N. Louisiana and Arkansas	11,008,000	10,991,000	—17,000
Wes. Texas and S. E. New Mexico	29,340,000	29,376,000	+36,000
East Texas	42,171,000	41,478,000	—693,000
Other Mid-Continent	160,345,000	161,090,000	+745,000
Gulf Coast	16,389,000	16,277,000	—112,000
Rocky Mountain	27,785,000	27,883,000	+98,000
California	33,830,000	34,046,000	+216,000
Total domestic crude	339,863,000	339,970,000	+107,000
Foreign crude	3,258,000	3,231,000	—27,000
Total crude	343,121,000	343,201,000	+80,000

Classification of Lubricants According to Change in Viscosity Over Given Temperature Range

By C. M. LARSON and W. C. SCHWADERER
Sinclair Refining Co.

Much attention has been paid in recent years to viscosity-temperature relationships[1,2,3,4]. The manufacturer and marketer of lubricants, designers and builders of engines and industrial equipment, the consumer — they all are primarily interested in this question.

When two or more known viscosity-temperature points of a mineral oil are plotted on the A.S.T.M. tentative standard viscosity-temperature chart and a straight line drawn through these points, the slope indicates the rate of change of the viscosity with temperature variation.

This viscosity-temperature relationship can be used for estimating the chemical structure of the oil and also enters into many calculations in chemical and engineering design, research and operation. Hydrogenation[5,6] and solvent-extraction[7] are used to improve this relationship and synthetic lubricating oils[8] are produced to give a better viscosity-temperature coefficient.

The reason for placing so much importance on viscosity classification lies in the fact that lubricating oils are subjected to a wide range of temperatures in service, which inevitably means a wide fluctuation in viscosity. It is a well known fact that the viscosity of an oil may drop to a point where the lubricating film is immediately broken, establishing a metal-to-metal contact resulting in excessive wear, while taking the other extreme, the viscosity may rise to a point where the oil becomes too thick or heavy for proper circulation and the bearings run dry.

Therefore, a good temperature-viscosity curve is essential[9,10,11].

1. In starting (the flatter the temperature-viscosity curve the less the energy required.)

2. In normal operation and at high temperatures and at high pressures (the better the temperature viscosity curve the less the friction and the lower will be the average temperature.)

Therefore, the whole range of viscosities to which oils are subjected must be considered. These limitations make it of utmost importance to establish a standard system of classification of oils in groups according to their suitability for the many purposes for which they are used.

The viscosity zone index is simple and readily adaptable to all classes of lubricants and has proven equally satisfactory to technical and nontechnical men. It is a convenient means for classifying and evaluating mineral oils and for analyzing specifications of oils according to their crudes and their viscosity slope values, i.e., their susceptibility to temperature change. This relationship is shown in definite units (zones) for comparison in the viscosity zone-index chart (Figure 1) and in the straight line viscosity-sector index chart (Figure 2).

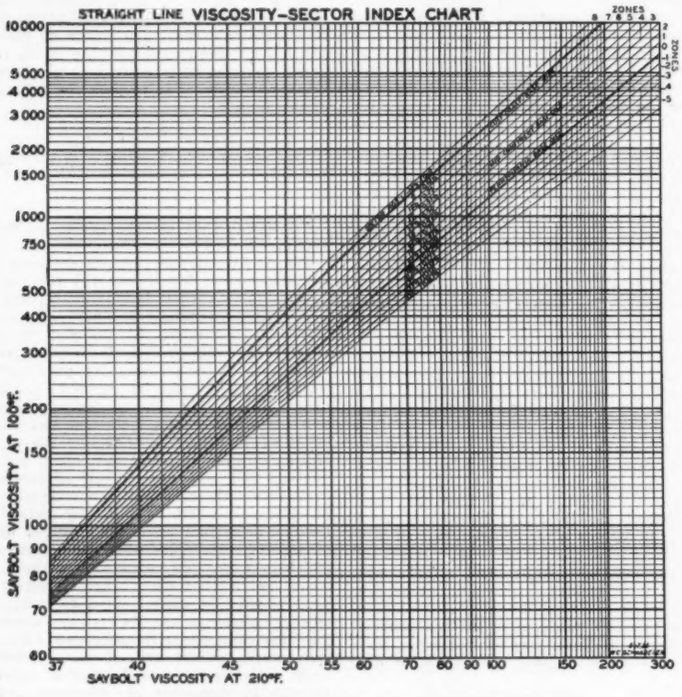


Fig. 2—Straight line viscosity-sector index chart

In Figure 2 this straight line law holds good down to 60 seconds at 210° F. Below that all lines tend to curve to allow for actual Saybolt determinations and the A.S.T.M. viscosity-temperature chart scale which is used for both the ordinate and abscissa.[12].

Not only is this viscosity-temperature relationship a true indication as to the stability of lubricating oils at high and low temperatures, but it also has a bearing on volatility and consumption,[7,13] and finally it may also be reliably used for predicting the coefficient of a blend of lubricating oils from a knowledge of their viscosity zone-sector ratings and the proportions of the components.

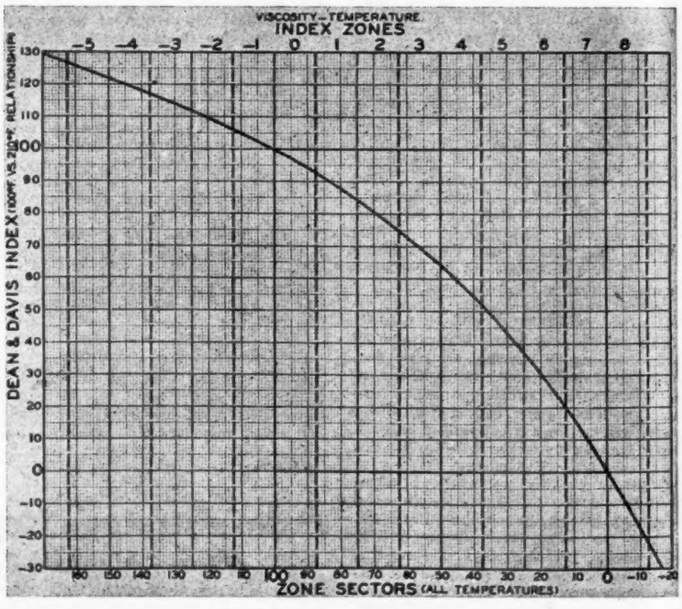
The values of the zones and sectors, originally obtained from the Sinclair viscosity-temperature chart, are maintained by the A.S.T.M. viscosity-temperature chart subsequently issued. The number of zones selected for practical use in the industry—not too many nor too few—were logically decided upon in accordance with the basic qualities inherent in the various crudes and in line with the tolerances found in each crude. Knowing two viscosities of an oil, i.e. at 210° F. and 100° F., or at 210° F. and 130° F., the viscosity-temperature zone classification of the oil can be accomplished by referring to the viscosity-temperature zone index chart (Figures 1 or 2) without making arithmetical calculation or resort to other charts. The viscosity-temperature zone-sector index values remain the same throughout the whole range of temperatures of the A.S.T.M. viscosity-temperature chart.

How to Use the Chart

The "x" axis of the chart (Figure 1) gives the viscosities at 210° F., while the "y" axis shows the corresponding viscosities at 130° F. and 100° F. The index of the unknown oil is easily determined by taking the ordinate of its viscosity at 210° F. and following it upward until it crosses the abscissa of its viscosity at 130° F. or 100° F. The intersection falls in one of the 12 zones and as each zone is numbered, the oil is indexed according to the zone in which the intersection falls. This method is very simple as no lines have to be drawn and any oil can be classified at a glance.

The reverse procedure can be followed where the viscosity at 210° F. and the basic characteristics of the unknown oil are known in order to determine the viscosity at 100° F. or 130° F. or vice versa. On the viscosity zone-index chart, the more desirable viscosity-temperature characteristics are contained in the lower zones, as the oils falling into the upper zones show greater temperature susceptibility. Zone 0 covers oils of Pennsylvania paraffin base characteristics, while Zone 7 represents oils of asphaltic base characteristics. In Zone 3 fall oils of Mid-Continent paraffin base characteristics. The other intermediate zones between Zone 0 and Zone 7 show the relative paraffinic or asphaltic character of oils and their susceptibility to temperature change.

Zone 8 contains oils still more susceptible to temperature change than those falling in Zone 7, while Zones —1 to —3 cover oils which have a superior viscous stability to the straight Pennsylvania paraffin base mineral oils falling in Zone 0. Such oils are generally synthetically produced or solvent treated oils. The decision to use a basic scale of but eight zones, viz.: Nos. 0 to 7, was based on the tolerances found to exist in the viscosities of oils truly representative of Pennsylvania paraffin base, Mid-Continent paraffin base and asphaltic base oils falling in Zones 0, 3 and 7 respectively.



ZONE	—5	—4	—3	—2	—1	0	1
Zone Sector	150 to 162½	137½ to 150	125 to 137½	112½ to 125	100 to 112½	87½ to 100	75 to 87½
Dean & Davis Index	122 to 126½	117 to 122	112 to 117	106 to 112	100 to 106	92½ to 100	84½ to 92½
ZONE	2	3	4	5	6	7	8
Zone Sector	62½ to 75	50 to 62½	37½ to 50	25 to 37½	12½ to 25	0 to 12½	—12½ to 0
Dean & Davis Index	75 to 84½	64½ to 75	52 to 64½	37 to 52	20 to 37	0 to 20	—22 to 0

Fig. 3—Conversion chart: Viscosity zone-sector index vs. Dean-Davis viscosity index

Dean-Davis Viscosity Index

It is easy to co-ordinate the viscosity zone-index with the Dean-Davis "viscosity index" and since this latter method has been widely in use in the petroleum industry, a conversion chart (Figure 3)

(Continued on Page 63)

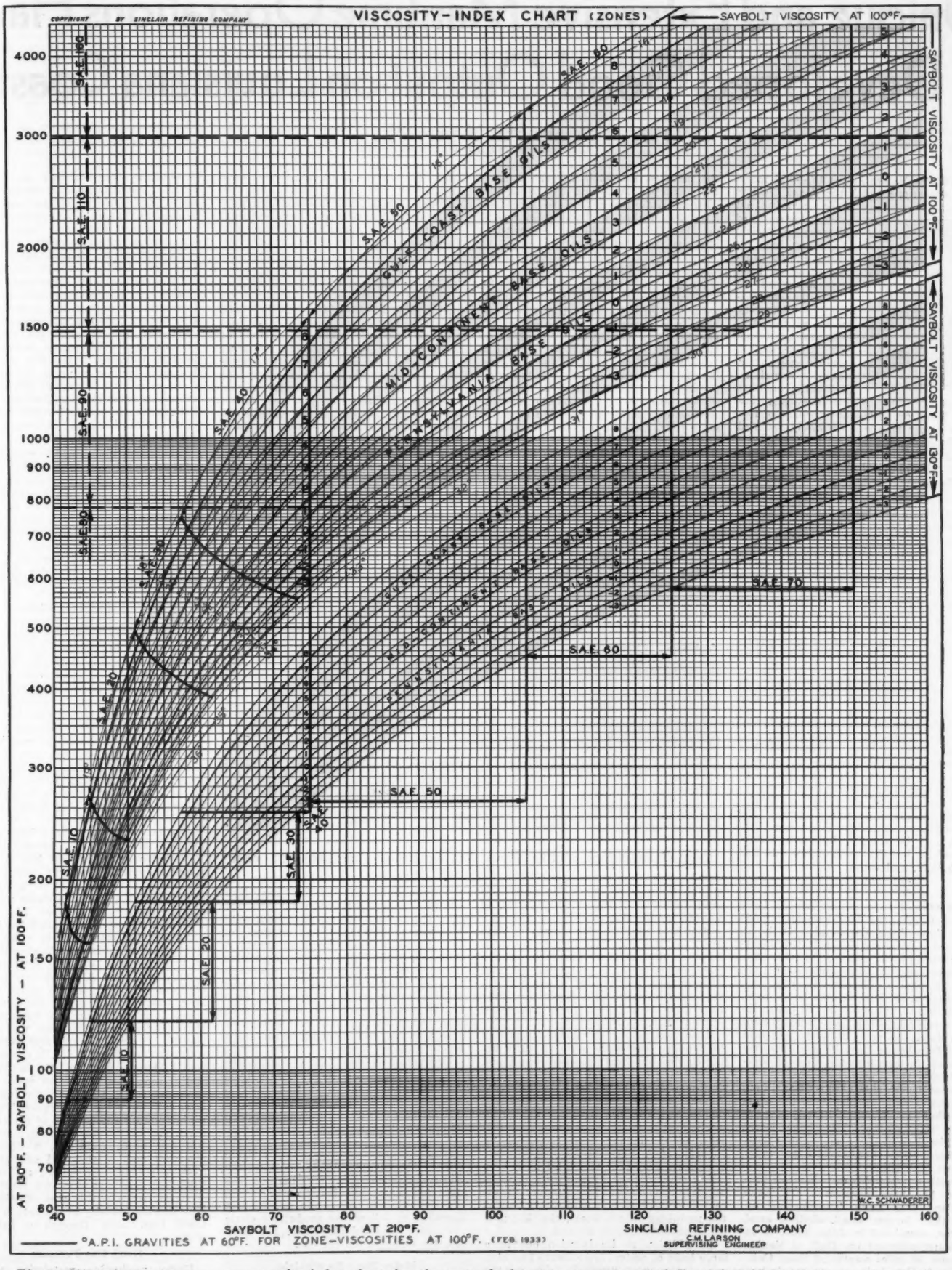


Fig. 1—Viscosity-temperature, zone-gravity index chart, for three standard test temperatures, 100° F., 130° F. and 210° F., used to classify mineral oils according to their viscosity-temperature characteristics, their base or their S.A.E. numbers, and for use in chemical and engineering research, design and operation

Unique and Extensive Maritime Operations Have Developed Good Output on Louisiana Coast

By NEIL WILLIAMS
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., June 18.—The maritime operations which the Texas Co. has been carrying on along the coast of Terrebonne Parish, Louisiana, have resulted in the proving up of at least two important oil fields, the establishment or discovery of oil at two others, and the bringing in of highly prolific gas at a fifth. Although no production, neither oil nor gas, has been found on them, the existence of two other domes has been definitely revealed by the drilling into cap rock and salt and it is reasonable to expect that something will materialize in future exploration.

Not included among these are two domes which are being developed simultaneously in the same project but which are in different parishes, one being Leesville, LaFourche Parish, and the other Garden Island Bay, Plaquemines Parish. The former, on which has been proved a field of considerable size, and the latter, on which high pressure shallow gas has been encountered but no commercial production, also are water located fields but the nature of the operations is of slightly different type than that of the Terrebonne Parish domes.

Most of the Terrebonne Parish fields are in open water exposed to wind, waves and tides of the Gulf of Mexico. Others are in the marshes fronting the coast, and while not in open water, are subject also to the winds and tides. Development has constituted a difficult and costly, as well as unique, venture. The only access to any of them is by boat, a base of operations being located at a spot on Bayou Terrebonne about 22 miles south of the city of Houma. This base is the last place which can be reached by road; below lies nothing but the desolate, low and flat marsh land, and water.

Fields in Open Water

The nearest field to the base is Lake Barre, one of the two principal fields which have been developed. It is 19 miles, 13 miles down sleepy Bayou Terrebonne through the marshes to where the bayou spreads out into Lake Barre, the northern end of Terrebonne Bay, and then 6 miles out into the lake to the field. Caillou Island, the other of the two principal oil fields which have been proved up to date, lies some 9 miles gulfward across Terrebonne Bay, being at the entrance of the bay into the Gulf of Mexico. Except for a few small patches or islands of marsh grass, the latter is entirely out of sight of land, and the nearest of these small marsh islands is more than a mile distant. The Lake Barre Field also lies in the open water except for a few marshy islands which are under water at high tides.

The other two fields on which oil production has been discovered are Lake Pelto and Dog Lake. The former, on which there is one small, shallow sand producer, completed in July, 1929, is in open water adjacent the Gulf of Mexico and some 10 miles westward from Caillou Island. Dog Lake at present is not productive but it was on this dome that the first well in Terrebonne Parish was completed, it pumping a small amount of oil daily for over a year. It is located in the marshes, accessible through some of the numerous lakes and bayous in that district. Although a total of nine tests have been drilled on Lake Pelto and 11 on Dog Lake no additional production has been found on either.

Two Large Gas Wells

Another of these domes, Bay St. Elaine, on which two of the biggest gas wells ever brought in on the Gulf Coast have been completed, is located on the marshy shore on the west side of Terrebonne Bay, some 6 or 7 miles north of Lake Pelto Dome. Both of the wells are in shallow sands, the first being completed in May, 1929, making an estimated 93,000,000 feet daily at 653 feet, and the second, completed in September of the same year, rated at 90,000,000 feet daily at 971 feet. No commercial oil production has been found although a total of 10 tests have been drilled by the Texas Co. In addition a number of tests have been drilled by Freeport Sulphur Co. in sulphur exploration.

Base of operations of The Texas Co., on Bayou Terrebonne, 22 miles south of Houma, La.

The two unproductive domes to date are Four Isle and East Bay Junop, both being in the marshes. The latter is the most westward of the group and the most distant from the base of operations, being about 50 miles in a direct line. Five tests have been drilled there and seven at Four Isle.

Development on all these domes has been under way since early in 1929, being carried on simultaneously on all and constituting one of the biggest operating programs ever undertaken. So far, Lake Barre has been the most extensively drilled and also has been the most productive, a total of more than 7,825,000 bbls. of oil having been recovered up through May. Between 25 and 30 tests have been drilled of which 20 have been producers. On June 1 there were 17 wells actually producing. Development is directed at drilling a line of wells around the periphery of the dome, the line now being about half way around.

In addition to its location out in a large body of water, Lake Barre has been one of the most unusual fields on the Gulf Coast. So far as known, it is the only field in which the life of its wells has been by flowing and in which a 98 per cent recovery is obtained from the sand. In this the wells are flowed until they start making all water and then they are abandoned. Bottom hole pressures are maintained at a fairly constant level throughout the life of the wells and there never is an occasion for pumping.

Hydrostatic Pressure

This phenomenon, if it can be called such, is attributed to the possibility that the water of the Gulf of Mexico, in which the field is located, has direct contact with the producing sand of the field at some near-by point and that the large volume of water and the overlying pressure are such as to provide a continuous and permanent hydrostatic pressure on the sand. Theoretically, just one line of wells in a circle around the dome, these wells being located as close to the dome as possible to tap the sand at its contact and highest point, will be sufficient to drain the entire oil reservoir.

For the most part the wells have been spaced at 600-foot intervals, although later the line may be redrilled with wells in between, making 300-foot intervals or less. All wells are produced at a rate of flow consistent with good production practice to insure a uniform encroachment of water and prevent the trapping of oil. Under steady withdrawal, most of the wells produce at least a year, some much longer, and one well made over a million barrels of oil before starting to make all water.

Production is found in a 3,700-3,800-foot flank sand known to extend from the east, around the north to the northwest side of the dome. The remainder of the dome is yet to be drilled. The contact of the sand underlies an "overhang" and is reached by drilling through a hard anhydrite cap and salt. Due to the steepness of the outward dip of the sand the limits of production are very narrow, possibly not more than 300 feet in places, which requires a very careful selection of locations to follow the productive circle and keep from drilling either too close into the dome or too far out.

Holes Must Be Straight

Because of the narrowness of the productive strip and the necessity of getting the sand as close up under the overhang as possible, particular attention has been directed at the drilling of vertical, straight holes. In this connection, drilling of the overhang has presented some difficulties. The hard anhydrite cap rock which covers the dome also extends down around the side of the salt and a test, encountering this anhydrite on the side after drilling through the top cap and the salt, usually experiences a little trouble in drilling straight into or through it instead of having the hole deflected back inward into the salt mass. The anhydrite is approximately 300 feet thick with about 2,500 feet of salt to drill through. Cavities in the cap also occasion some trouble although the situation is not as serious as that at Barbers Hill and a few other domes. The Lake Barre Dome is comparatively shallow with the top of the cap being encountered in places as high as 700 to 800 feet.

Lake Barre wells come in making from 1,200 to 1,800 bbls. daily initial production through a half-inch choke on tubing. The average pressure is around 500 pounds. Approximately 40 to 45 feet of sand usually is taken in. There is no production through casing. After cleaning themselves the wells are cut down from their respective initial flows to a steady consistent rate in conformity to production restrictions.

Caillou Island Field

The Caillou Island Field presents slightly different operating conditions in that greater gas pressures are evident. It is possible that the field may enjoy the same water drive conditions as Lake Barre. However, the field, as far as production is concerned, is somewhat more recent than Lake Barre, only four wells having been completed, and consequently very little can be told as yet. Caillou Island is producing from two different sands, both deeper than the single producing horizon at Lake Barre. The dome is being developed similarly to the latter in that a single line of wells is being drilled around it.

A total of 11 tests have been drilled, all on state leases in Terrebonne Bay. The discovery well was No. 8 State, completed in July, 1933. It came in flowing initially at the rate of 2,290 bbls. daily through a half-inch choke with bottom in sand at 5,981 feet. The second well, No. 9 State, was completed in November of the same year in a sand at a total depth of 4,070 feet flowing initially at the rate of 2,120 bbls. daily through a half-inch choke. Although only between 500 and 600 feet to the south and a little west of No. 8 State, the sand from which it is producing was not found by the discovery well. The next well drilled was No. 11 State, located 500 feet southwesterly from No. 9 State. It encountered the 4,000-foot sand of the latter well and at a depth of 3,983 feet was brought in during April, this year, flowing 2,040 bbls. daily on a half-inch choke. The next well, No. 10 State, located at the extreme north end of the line of wells and some 500 feet north from No. 8 State, the discovery well of the field and also the 6,000-foot sand, also missed the shallow 4,000-foot sand and went to a total depth of 6,094 feet where it was completed in May flowing initially at the rate of about 1,600 bbls. daily through a half-inch choke.

Good Gas Pressure

Under production restriction regulations of the state of Louisiana, all the wells have been pinched to daily flows between 600 and 700 bbls. each, which they are holding steadily under pressures

ranging from 700 to 985 pounds. The excellent gas pressure condition, coupled with a hydrostatic head, and the existence of two known good sands, have resulted in Caillou Island being looked upon by the operators with particular favor. The oil is of considerably better quality than that at Lake Barre, the 4,000-foot sand producing a 31 gravity crude and the 6,000-foot sand a 35 gravity grade. The dome is somewhat deeper than Lake Barre, the cap being topped at its highest point to date around 2,800 feet. Through May a total of approximately 668,000 bbls. had been recovered.

Little additional from what has been stated previously is known concerning the productive possibilities and conditions of the remaining domes of the Terrebonne Parish group. Steady drilling development still is being carried on on all of them. All the domes except one are comparatively shallow. Lake Pelto, on which there is one producing well in a shallow sand, finds cap as high as 1,800 feet; Bay St. Elaine has cap between 600 and 700 feet in places; Dog Lake, around 1,500 feet, and Four Isle around 700 feet. East Bay Junop, the exception, has not found cap rock above 4,800 feet to date.

Leesville in Marsh Land

Leesville, located in LaFourche Parish, and which is operated out of the Houma base along with the Terrebonne Parish domes, is not exactly a water located field. It, however, is located in a semi-marshy district, east of the Terrebonne Parish coastal marshes, requiring the dredging of canals to all the locations, and giving the field a Venetian atmosphere. Bayou LaFourche, a navigable stream, also traverses the field. Although the Texas Co. was the discoverer, and until recently the sole developer, extensions have been made to leases of the Gulf Refining Co. and also to a number of smaller independents, who have acquired state leases on Bayou LaFourche. Leesville is approximately 25 miles east of Lake Barre and is reached by boat by a trip across Lake Barre and up bayous and canals through the marshes. The field has produced approximately 1,270,000 bbls. to date. The discovery well was completed in February, 1931. Characteristic of the field are the numerous sands which have been found although the main production is from a 3,600-3,800-foot horizon.

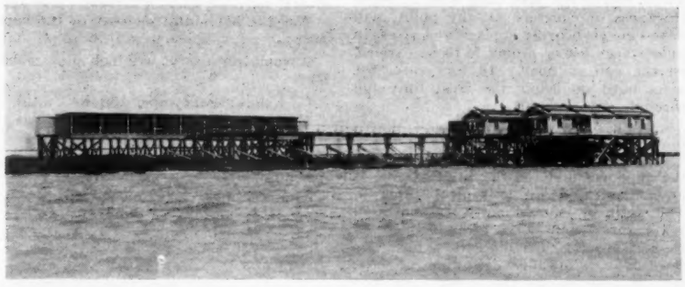
Development of this group of domes has been accomplished only through the overcoming of numerous problems. The first of these has been transportation although now, except for the time involved, this is not such a serious matter as might be supposed. At least, with all hauling and transportation by boats there can be no delays because of impassible roads and such difficulties as are experienced on land. The operations are always accessible by water and only when it is necessary to dredge a canal to some marsh land location is there any delay or trouble.

Company Has a "Navy"

The Texas Co. maintains a regular navy of boats of all descriptions, there being a total of 83 watercraft. These include 36 barges, 9 speed boats, 33 tugs and luggers and 5 house boats. The barges are used in the movement of equipment and materials, drilling mud, water for boilers, and oil, there being special barges for the various purposes. These are towed where needed by the tugs and luggers. The speed boats serve for the transportation of the men around the various operations. The house boats provide living quarters for the men at several of the domes.

The boats are operated out of the base which is located, as previously mentioned, on Bayou Terrebonne, 22 miles south of Houma. There the company has its operating office for that district, its warehouse and loading docks, commissary for distribution of food supplies to the various camps, its shops and other facilities. The speed boats, which have speeds varying from 25 to 35 miles an hour can make the distance from the base to the nearest dome, Lake Barre, in about 45 minutes, depending, however, on the weather and roughness of the water. The tugs and barges require a considerably longer time. East Bay Junop dome, the farthest away, which can be reached through the network of bayous and waterways through the marshes, or by an open water route across Terrebonne Bay and out around the Gulf of Mexico, takes about two hours. Leesville, in LaFourche Parish and not included in this particular group of Terrebonne Parish domes, is about the same distance as East Bay Junop and is operated by boat out of the Houma base, a canal leading eastward out of Terrebonne Bay to it. Gar-

Foundations for drilling rigs, tanks and other production facilities have been one of the chief considerations in these operations. Piling has been used generally in the deeper water while matting bases have served in the shallower water and marsh locations. On a drilling rig setup a total of 260 piles, ranging from 40 to 60-foot lengths, are required, and the time for driving these, bracing, capping, building derrick and rigging up amounts to approximately 30 days. The use of large, submersible drilling barges, one of which recently has been perfected and put in operation by the company, is expected to eliminate the need of such



One of the camps established by The Texas Co. for its men out on water

den Island Bay, although under the supervision of the Houma district, is a separate operation. The slowness of barges as compared with trucks in land operations is compensated for in the fact that barges can haul many more times as much at one trip than a truck.

Another problem faced by the Texas Co. in the development of these domes was housing and care of the men working in the fields and on rigs out in the water and marshes miles from habitable land. By facilities which have been provided, the men perhaps are as comfortable and well fixed as if in land operated fields. At Lake Barre, Caillou Island and Lake Pelto, the three open water fields, modern camps, built up on piling, are established. While there is no ground on which the men can step out, each camp contains every convenience, including clean, screened in bunking quarters, kitchen and dining facilities and recreation rooms. There are electric refrigeration, hot and cold running water, showers, and sanitary provisions. At the marsh land located fields, houseboats furnish the same conveniences. The men remain in camp 12 days at a time and then are off four days, being taken back to the Houma base. In the event of warnings of severe storms all are taken back to land. The camps, however, are built with special provisions for strength and safety for protection of the men against winds and high tides. The best and plenty of food is fed the men, this being boated in daily from the Houma base.

setting up. Additional drilling and boiler barges are now under construction. The barges, with all equipment permanently mounted, can be moved from one location to another in a comparatively few hours. These barges, and their importance, were described in an article in The Oil and Gas Journal, May 31 issue.

At Lake Barre and Caillou Island, both of which are over water, walkways have been built on piling connecting all wells, tanks and other facilities. Fuel lines and crude gathering lines are laid along these walkways to storage. Tankers, whose seaworthy days are over, are being used for storage at both fields although there is some additional regular steel storage at each field. At the former field, the Louisiana, with a capacity of 30,000 bbls. is stationed, while at Caillou Island the Tampico, formerly a tanker barge and at one time an old French prison ship, is in use. The latter has a capacity of 18,000 bbls. These boats were towed into position and now are resting permanently on bottom although it is possible to refloat them.

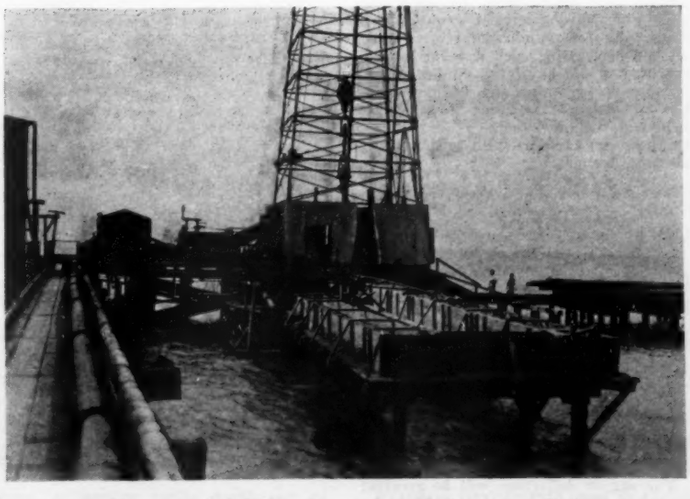
Loading of Tankers

These tankers have been left intact with all their equipment and from them the crude is loaded on seagoing barges and carried to waiting tankers out in the Gulf of Mexico for movement to the company's refinery at Port Arthur. The shallowness of the water around these fields prevents tankers from loading directly at the fields, the water around Lake Barre being around 6 feet deep and that at Caillou Island about 9 feet. In fact it is impossible for a loaded tanker to come much within 6 miles of shore. A relay tanker also is stationed permanently in one of the passes from the bay into the Gulf where crude for additional storage and where crude can be accumulated pending loading of tankers out in the Gulf.

Providing an adequate supply of drilling mud and fresh boiler feed water has been an important item. Both have to be barged in from a point inland which is located just above the base of operations. From 1,000 to 1,200 bbls. of mud are required for each well. Natural mud is used mostly, this being obtained from excavations and mixed at a central mud mixing plant which has been built. Fresh water is obtained from an old lake or reservoir located a short distance from the base. Some consideration has been given to the installation of special equipment out in the fields for making fresh water from the salt water but so far this has not been necessary. Condensers, however, are provided at all rigs which recover from 75 to 80 per cent of the water from all exhaust steam of the engines and pumps, reducing the requirements of water from around 1,000 bbls. to 200 bbls. daily.

Although Lake Barre, Caillou Island and Lake Pelto now supply their own fuel, there being sufficient gas at the two former fields for all drilling purposes, gas lines which were laid early in the development of the domes from Bay St. Elaine to Lake Barre and Lake Pelto offer an additional available supply of fuel. A 4-inch line connects Bay St. Elaine and Lake Barre, a distance of 15 miles, while a 3-inch line connects the former with Lake Pelto, a distance of about 10 miles. These lines are submerged, being laid across the bottom of the bay. They are not now in use and except for fuel at Bay St. Elaine itself, the two gas wells there are shut in. No line has been laid to Caillou Island because its production is more recent and from the first it has made sufficient gas of its own.

One of the most interesting things in connection with the development of these fields is the communication system. All the fields are isolated, preventing the laying or stringing of wire connections, so short wave radio-telephone sending and receiving stations have been provided at all the fields and at the base of operations south of Houma. Contact can be had with any point at any time desired, and at certain designated times each day regular reports and instructions are passed back and forth between the various fields and the base.



Close-up of drilling rig set-up at Lake Barre Field

ROYAL DUTCH REPORT

Report of Royal Dutch Co. (holding company) for year ended December 31, 1933, shows net income of 30,546,306 florins, after expenses, taxes, interest, exchange adjustments, etc., equivalent after dividends on the 4 per cent preferred stock, to 6.05 per cent on 503,624,000 florins ordinary stock. This compares with 28,303,691 florins, or 5.61 per cent

"Our cash position," states the report, "which was already very strong the year before, is now even better. Moreover, all our stocks of crude oil and products over the whole world are unencumbered."

The group's production of crude petroleum last year amounted to 21,957,392 metric tons, or 971,062 metric tons greater than in 1932. This was an increase of 4.6 per cent, while world production increased almost 9.3 per cent. The group produced 11.2 per cent of the world production of 196,694,227 metric tons in 1933, compared with 11.6 per cent of the world output of 178,905,201 metric tons in 1932.

"The groups fields have been producing far below their actual capacity," states the report, "and the fact that the increase in the group's production is so much less than that of the world's production is due to our having adhered more strictly than many other companies to the policy—not yet generally applied—of not producing any oil which the market cannot absorb."

Neat, Safe and Economical System of Supports for Overhead Piping in Refineries Described

By DANIEL IRWIN

Simple and inexpensive supports for the overhead piping in the refinery may be made from used and reclaimed pipe, electric arc or gas welded, and the concrete bases and the supports placed with the supervision of a surveyor or civil engineer. The design and construction suggested here gives a neat, safe and economical system of supports permitting easy erection and orderly arrangement of the overhead piping.

The support is shown in its simplest form in Figure 1., and it may be elaborated to include more than two vertical and more than one horizontal members, especially at corners and at line intersections. Diagonals, anchors, guides and clamps may be added for various purposes. Single post supports are not recommended, by reason of their lack of flexibility (addition of new pipe lines) and poor lateral strength.

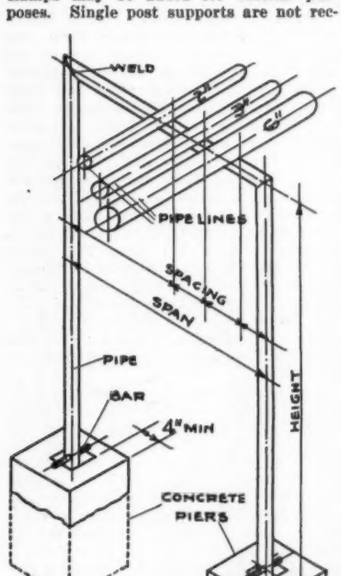


Figure 1—Pipe support

The bases consist of plain concrete piers, with square or rectangular holes to take the pipe support posts. The piers are leveled and aligned by surveyor's instruments so that when the shop-built supports are set, grouted in place after alignment, the pipe lines will have the proper positions for alignment and elevation and the correct pitch for drainage.

Figure 2 shows the details of the construction, and the setting pins of the support members that are provided by the shop to the specifications of the surveyor or civil engineer designing the work. The design of the pipe lines is based on the survey with levels or profile of the ground.

The design of the supports follows good structural practice, using a knowledge of elementary mechanics and strength of materials. For the concrete, use a 1:4½ mix, that is, one part portland cement to four and a half parts fine and coarse aggregate. The proportions of sand and stone or gravel in the aggregate must be determined by test samples and experience. The smallest practical pier, which means not less than 4 or 6 inches thickness of concrete at any point, will have enough bearing surface and strength unless very heavy piping is to be carried, or the soil is poor. In any case, the piers must go below the frost line, and through any new fill.

Structural Problem

The structural problem of the pipe for the supports and for the lines carried is best illustrated by a typical problem. The refinery should have standardized spans for various sizes of pipe lines, as well as spacings for pipes in banks. For the spans, allowable deflection of pipe will be governed by the appearance. Too great deflection will be noticeable. For the pipe spacings, flange diameters plus clearance will give an economy in repair and maintenance. Pipe spaced too closely also has a poor appearance.

Generally, clumsy looking supports, badly spaced piping with aimless direction, depreciates the value of the plant, besides adding hazards to safety and to smooth and economical operation. This offsets modern and good appearing equipment. Poorly arranged piping and supports are often caused by the refinery management placing the burden of the plant piping arrangement on an equipment manufacturer, whose interest primarily is limited to the immediate vicinity of the equipment under contract for construction at that time. Another factor is that the refinery should establish minimum headroom and side clearances that will permit the passage of vehicles, cranes or other portable equipment in piping and supports.

Problem Illustrated

The problem selected to illustrate the piping support design is: The support of one 2-inch, one 3-inch and one 6-inch pipe line, each pipe filled with water, spacing of supports, 20 feet on centers, height of pipe lines above the base line 12 feet. Figure 3 gives the working sketch for the calculations. The symbols and nomenclature follow the standard structural steel handbooks. Values are within allowable error, using a slide rule.

The pipe lines to be supported are treated as continuous beams, with the maximum bending movement over the supports and negative. For the horizontal member of the support, this is treated as a simple beam, having a multiple of unsymmetrical concentrated loads. As few handbooks give a direct method of treating such a beam loading, the data should be useful, applied to any number of loads, at any distances, and the method of obtaining the bending moments and the reactions or stresses on the posts explains itself without complicated description.

For the 2-inch pipe:

$M_{max}: \frac{W1}{12} = \frac{130 \times 240}{12} = 2{,}600$ in. lbs.

S: section modulus, 0.56

I: moment of inertia, 0.67

f: fibre stress, $\frac{M_{max}}{S} = 4{,}650$ lbs. per sq. in.

D: deflection, $\frac{W\,l^3}{76.8EI} = 1.2$ inches

E: modulus of elasticity for steel, 29,000,000

The sag or deflection will be greatest for the smallest, or 2-inch pipe. Thus the supports must be set so that one is at least 1¼ inches below the preceding one to give a drainage to the pipe.

For the horizontal member of the support:

Assume the use of a 2-inch pipe member.

C. Loads: 2-in. pipe, 130 lbs. total
B. 3-in. pipe, 165 lbs. total
A. 6-in. pipe, 630 lbs. total

(Spacing as shown in Figure 3.)

The reactions (loads on posts):

$R_a = \frac{6}{48}(630) + \frac{15}{48}(165) + \frac{22}{48}(130) = 192$ lbs.

$R_b = \frac{26}{48}(130) + \frac{33}{48}(165) + \frac{42}{48}(630) = 733$ lbs.

The bending moments:

A. $R_b \times 6 = 4{,}400$ in. lbs.

B. $(R_b \times 15) - (A \times 9) = 5{,}330$ in. lbs.

C. $R_a \times 26 = 5{,}000$ in. lbs.

Another way of obtaining "C" bending moment is given to show that regardless of how many load points, the problem indicates how to obtain the bending moments.

C. $(R_b \times 22) - (B \times 7) - (A \times 16) = 5{,}000$ in. lbs.

The M_{max}' (maximum bending moment) is at "B" or at the point of support of the 3-inch pipe: 5,330 in. lbs.

f': fibre stress, 9,500 lbs. per sq. in. a value of fibre stress that is well within the safe allowable.

For the posts:

Assume the same pipe size as for the horizontal member.

The greater reaction on the posts: 733 lbs. R_b

The height (unsupported length): 144 inches h

The allowable unit compression value for the pipe as a column may be taken as:

$$19{,}500 - 100\frac{h}{r} \text{ lbs. per sq. in.}$$

where: 19,500 is one-half the elastic limit of steel, h is the unsupported length, in inches, and r is the radius of gyration of the section selected. Thus, for a 2-inch pipe:

$$\frac{h}{r} = \frac{144}{0.787} = 183$$

which gives an allowable working stress for the column of 1,200 lbs. per sq. in. The pipe has an area of 1.075 sq. in. and is ample for the load at the height given.

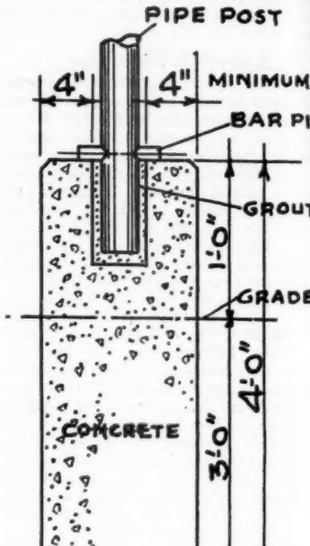


Figure 2—Concrete pier

This should include all that is necessary for the design of the type of pipe support suggested.

The following factors, for pipe, taken from the manufacturers' handbooks are useful:

Size—	Diameter Outside	Diameter Inside	Wall thickness	I	S	r
2-inch	2.375	2.067	0.154	0.666	0.561	0.787
2½-inch	2.875	2.469	0.203	1.530	1.064	0.948
3-inch	3.500	3.068	0.216	3.017	1.724	1.164
4-inch	4.500	4.026	0.237	7.233	3.214	1.510
6-inch	6.625	6.065	0.280	28.140	8.496	2.245

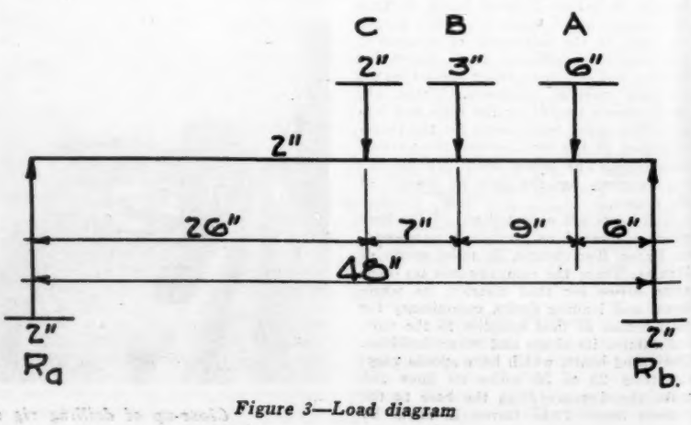


Figure 3—Load diagram

Stripper Operators in Wichita Falls and Ranger Districts Are Now Turning to Repressuring

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., June 18.—Operators in the stripper well areas of the Ranger and Wichita Falls districts have had serious difficulty in making ends meet during the past three years when the price of oil did not compensate for the drilling and producing of even flush producing wells, but during the past year operators in these two districts have been profiting a little on their investments.

However, thirfty operators are now turning to the repressuring of their leases, an artificial method of lifting oil, that is generally profitable, if the machinery and equipment for repressuring can be obtained at not too much of an expense.

Harold G. Neely, president of the Iron Mountain Oil Co. of Fort Worth, who has had experience in the gas fields of the eastern states, assisted by Joe Cable, repressuring expert of Wichita Falls, Tex., has designed and is operating a repressuring plant that cost only $4.100, including about 14,000 feet of 2-inch gathering line, this plant repressuring and servicing 26 wells in the Tatum Pool in the T.E.&L. Survey, Young County.

Average Depth of Wells

Wells in this pool are producing from an average depth of 660 feet, production coming from the Tack sand, just underneath the Gunsight lime, which is around 16 to 17 feet in thickness. The drilling is easy, spudders being used. The area repressured covers 80 acres and four wells are used for the injection of the gas, these wells all being located on the lower part of the structure, one on the northwest edge of the pool, one on the southeast, one on the east and one almost in the center of the pool, but located in the trough.

The average initial production of the wells was 15 bbls. per day, pumping. The field was first drilled in the fall of 1930, but the repressuring was not started until the summer of 1933 after the drilling was completed. Peak production of the pool was 140 bbls., and if repressuring of the wells was not being carried on at the present time, the wells would produce only about one-third of the present daily average.

When repressuring work was first started on the lease only 5,000 feet of gas per day was purchased for this work, but now around 30,000 feet per day is purchased from the United Gas System, the input of gas increasing as the pool ages.

The original gas costs 20 cents per 1,000 feet, but recycling cuts down the amount of gas purchased, this work being started January 1, 1934, and although 54,000 feet of gas is now being used, only a little over half of that amount is purchased. The compressor plant and power absorbs 19.000 feet per day. There is no gas produced in the wells.

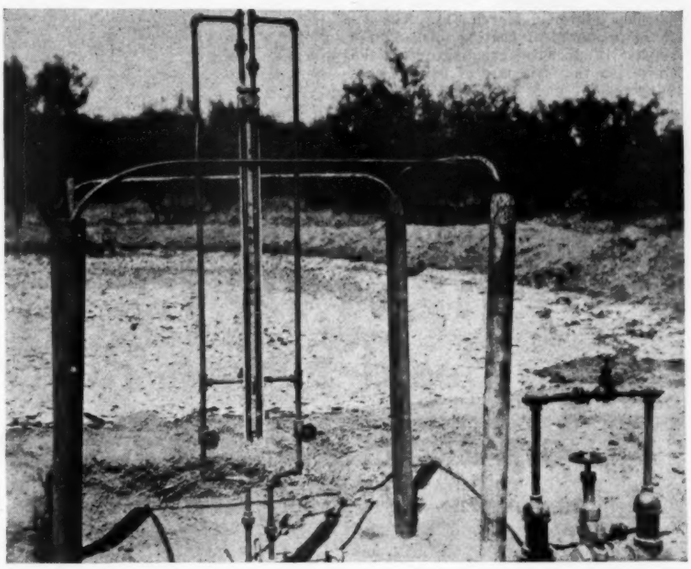
The operators are trying only to hold up the production, which has been done thus far, and only one change had to be made in the system, one repressuring well changed to another on the structure. About 400 feet of gas is used per barrel of fluid recovered, some water being made by edge wells, although the repressuring of these edge wells holds back the water to a great degree.

The company intends to write off the plant in five years' time, or about $1,000 per year, the plant costing around $8.50 to $9 per day to operate, varying in proportion to the amount of gas purchased for the input.

The plant is made up of one second-hand 12x6x12 Laidlaw compressor; one 35-horsepower Superior engine, two second-hand 3-inch suction and 2-inch discharge Worthington pumps, a second-hand 2⅞-inch line shaft and pillar block, a new belt and three pulleys on line shaft, and new building. Second-hand inter and after coolers were installed, and expansion tanks were made out of 15½-inch second-hand casing, same operating under 160 pounds pressure. New spray heads were installed in the earthen cooling reservoir. There are no recording meters, orifice plates and U-tubes being used for checking the pressures, readings being made on pressure wells three times a day.

Fern Hunter, superintendent of the Iron Mountain Oil Co., is a new man on this work, but is proving that production men can successfully handle such work after being supervised for a short time, which is necessary when a small company can ill afford to employe expert repressuring men.

Other operators in the area, especially in the New Castle Pool of Young County, are erecting or starting the operations of repressuring plants, and this method of artificially lifting the crude, thereby making their leases much more valuable, is becoming popular in the marginal or stripper areas, many of which are located in these districts. However, as in the case of this small company, other small companies will also have to build their repressuring plants as economically as possible in order to realize a profit on their leases.



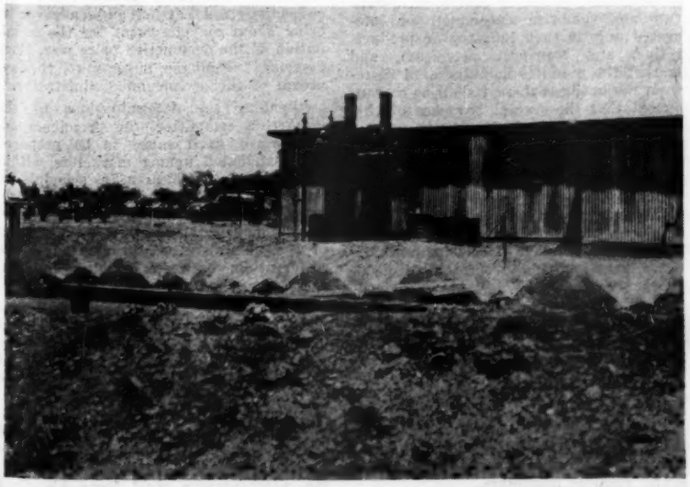
U-tube indicator in use in recording pressure on lines at pressure wells of the system

MIDGLEY TO SPEAK

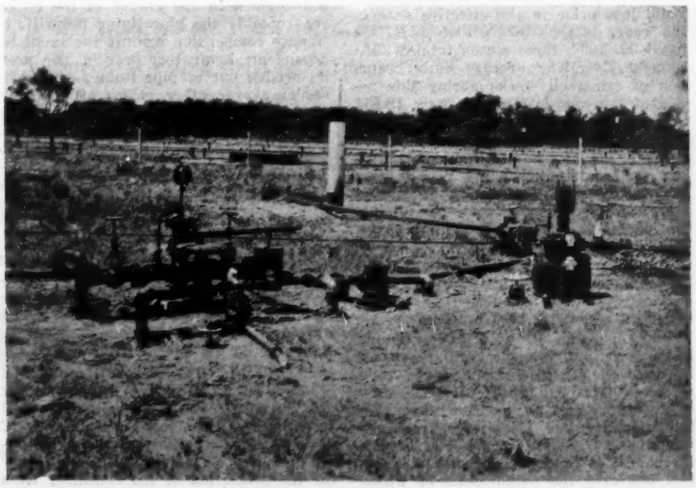
CHICAGO, June 18.—Thomas Midgley, Jr., inventor of tetraethyl lead and Ethyl Gasoline, will lecture before the Chicago section of the American Chemical Society at the Stevens Hotel, Friday evening, June 22, on the commercial recovery of bromine from sea water. Mr. Midgley is vice president of both Ethyl Gasoline Corp. and Dow Chemical Co., which recently began operations in a plant at Wilmington, N. C., on a joint project for bromine recovery. This is regarded by scientists as an outstanding chemical engineering project of the age.

PETROLEUM AND PRICES

Dr. H. T. Mann, head of the school of petroleum engineering, Massachusetts Institute of Technology, Cambridge, Mass., will address a special meeting of the Mid-Continent section of the A. I. M. E. on "Petroleum and Prices" in the auditorium of the University Club, Tulsa. on the evening of June 25 at 8 p. m. This is an open meeting and anyone interested is invited to attend.



Picture showing earthen cooling system, expansion tanks made out of 15½-inch second hand casing



Pressure instruments used in conjunction with the repressuring plant. Notice rod lines to wells from power house not shown, but at right of picture

Administrator Answers Many Misrepresentations Made at Hearings Before House Committee

Secretary of the Interior Harold L. Ickes, oil administrator, during the week made public a statement by the Petroleum Administrative Board in answer to numerous misrepresentations made before the House Committee on Interstate and Foreign Commerce by opponents of the Disney-Thomas bill.

The text of the statement, which was submitted for the board by Charles A. Fahy, acting chairman, to the members of the House Committee, follows:

During the course of the hearings on the Disney bill recently concluded before your committee certain misrepresentations were made. For the purposes of the record we would like to correct any possible misunderstanding that may exist by reason of these misstatements.

1. The claim that production allowables under the code have been below market requirements.

This position of the opponents of the bill is based upon the false hypothesis that the entire market requirements should be satisfied out of current domestic production. The code very properly requires that the amount of imports and withdrawals of crude oil from storage must be considered in determining the amount of current domestic production required to meet market requirements. If this were not done all imports and all withdrawals of crude oil from storage would represent excessive supplies above market requirements.

Withdrawals

2. The claim that withdrawals from storage have been permitted to absorb too large a part of the market requirements.

The code authorizes the restriction of withdrawals of crude oil from storage. It does not authorize the placing of any restriction upon withdrawals of gasoline, fuel oil or other petroleum products from storage. The only specific limitation placed in the code is that withdrawals of crude oil from storage during the remainder of 1933 after the effective date of the code, September 2, 1933, shall not exceed 100,000 bbls. per day. The approval of all applications for withdrawals of crude oil from storage contains an express provision that the applicant must supply its requirements by purchases of current production if it should become available. Hence, only a portion of the actual approved wtihdrawals of crude oil from storage are utilized. According to the records of the U. S. Bureau of Mines, crude oil stocks on August 31, 1933, just prior to the effective date of the code, totaled 360,001,000 bbls. On April 30, 1934, these stocks totaled 354,350,000 bbls. The average daily reduction of crude oil stocks during this period of the code is therefore only 18,851 bbls. It is interesting to note that the stocks of companies having as much as 100,000 bbls. of crude oil remained virtually stationary during the period from August 31, 1933, to June 2, 1934. The average daily allowed domestic production during this period was approximately 2,300,000 bbls.

3. The claim that the reduction in oil stocks during the period of the code demonstrates that production allocations under the code have been too low.

The opponents of the bill cite figures of the Bureau of Mines revealing a reduction of all oil stocks under the code (through March, 1934) of 28,000,000 bbls. but neglect to mention that this reduction resulted principally from the reduction of 28,212,000 bbls. (through March, 1934) in stocks of light and heavy fuel oils over the withdrawals of which the code authorizes no restriction. The reduction in stocks of heating oils during the winter months is a seasonal occurrence. It was particularly pronounced during the past winter because restrictions on imports and the excise tax on fuel oil imports reduced the supply formerly received from foreign sources. This reduction in stocks of heating oils does not demonstrate that the current domestic production was restricted below market requirements. The opponents did not mention the fact that motor fuel stocks during this same period increased 9,855,000 bbls. (through March 31). The decrease in stocks of heating oils and the increase in stocks of gasoline during the winter months is a part of balanced refining operations. During the summer months fuel oil stocks will increase and gasoline stocks will decrease. It is interesting to note that if the 28,212,000 bbls. of heating oils taken from storage during the past winter had been manufactured from current production, it would have been necessary to manufacture concurrently approximately 32,500,000 additional barrels of gasoline, which would have caused an increase of 43,500,000 bbls. in gasoline stocks. Such an increase in gasoline stocks would have so weakened the gasoline market that it would have been impossible for nonintegrated refiners to operate.

Imports

4. The claim that excessive imports have been permitted under the code.

The following table shows the average daily imports of crude petroleum during each of the past six years:

	Bbls.
1928	251,000
1929	298,000
1930	289,000
1931	236,000
1932	204,000
1933	127,000

Under the code an order was issued restricting imports to the daily average during the last six months of 1932. This was a period of low importation, the daily average being 108,000 bbls. per day. The figures of the statistical division of the Federal Tariff Commission show a daily average importation for domestic consumption of 88,000 bbls. of crude petroleum, fuel oil, lubricating oil, gasoline, kerosene and paraffin wax during the eight months from September, 1933, to April, 1934, inclusive. The import tax paid on these imports amounted to $4,817,810, or 31.63 per cent of their declared value. The total imports of petroleum and its products into the United States during this period amounted to 117,200 bbls. daily. The difference between this figure and the 88,000 bbls. per day imported for domestic consumption represents petroleum and its products brought in under bond for refining, bunkering of vessels engaged in foreign trade, or transshipment. The code authorizes restrictions only on imports for domestic consumption. It should be noted that present imports consist primarily of heavy crude oil intended for asphalt or fuel oil manufacture, and fuel oil. The exports during this period averaged 303,095 bbls. daily.

5. The claim that a large part of crude oil in storage is imported foreign oil.

The records of the U. S. Bureau of

(Continued on Next Page)

Darrow Board Submits Report on Petroleum; Favors Federal Control of Overproduction

WASHINGTON, D. C., June 18.—The National Recovery Review Board, of which Clarence Darrow is chairman, has submitted a report on the petroleum industry to the President. The findings and recommendations follow:

Findings

1. That the Secretary of the Interior, who is the administrator of the petroleum industry, has administered the supremely difficult problems, as well as the code with which he has to work, has permitted; but that changes suggested herein would permit a more effective administration of these difficult problems.

2. That the small business in the petroleum industry is largely centered in the marketing branch of the industry. One of the advantages the large companies have over the small independents is their ability to utilize the large profits obtained in one branch of the industry (notably the pipe lining branch), to finance competition against the small independents in another branch. The profits arising out of pipe lining, due to its economy over other modes of transportation of petroleum, are thus used as a destructive force against the small business in the industry. It would be advisable to segregate, in the manner prescribed in Rule 6 of Article 5, the pipe lining profits so that the same could not be used to finance competition against small independent marketers.

3. That the trackage and individual brand station owners constitute a considerable factor in the industry, and are entitled to representation on the Planning and Coordination Committee which they now do not have.

4. That control over the production of crude oil is necessary in the interest of conservation of an exhaustible natural resource; that control in the interest of price regulation is disruptive of the regular processes of competition so necessary for the protection of the consumer from unreasonable prices. That control should be exercised, therefore, only to prevent waste through greedy, unscientific production.

5. That pending legislation of the character of the Thomas bill (S. 3495), should be enacted, so that the production of crude petroleum, the development of new pools and imports may be under Federal control.

6. That the marketing branch of the petroleum industry is constantly beset by widespread gasoline price wars which are particularly detrimental to independent marketers. That any plan seeking to cure evils existing in the petroleum industry should afford some relief from these destructive occurrences.

Recommendations

1. That Rule 6 of Article 5 be amended so as to read:

"In as much as there are firms and corporations in the petroleum industry who severally or through firms and corporations, owned or controlled, constitute and comprise a complete or integrated unit in such industry or produce, refine, and transport petroleum, and market the products manufactured therefrom the business thereof shall be so conducted that the several branches of this industry, viz.: producing, refining and transporting of petroleum and marketing of the refined products may be carried upon a profitable basis and that no one or more of the said branches shall obtain or receive excessive or disproportionate gain or profit therefrom to the exclusion of any other branch of this industry."

2. That methods of enforcing Rule 6, as thus amended, be devised, or the entire rule be stricken from the code; and its purpose be attained by the division of the large, integrated companies which operate in more than one branch of the industry into separate companies, each of which operating in only one branch of the industry.

3. That the Planning and Coordination Committee be enlarged by the addition of a representative of the individual brand gasoline marketers.

4. That the procedure heretofore inaugurated by the administrator of this code in effectuating settlements of ruinous local price wars in localities should be further strengthened by an addition to the code of the following:

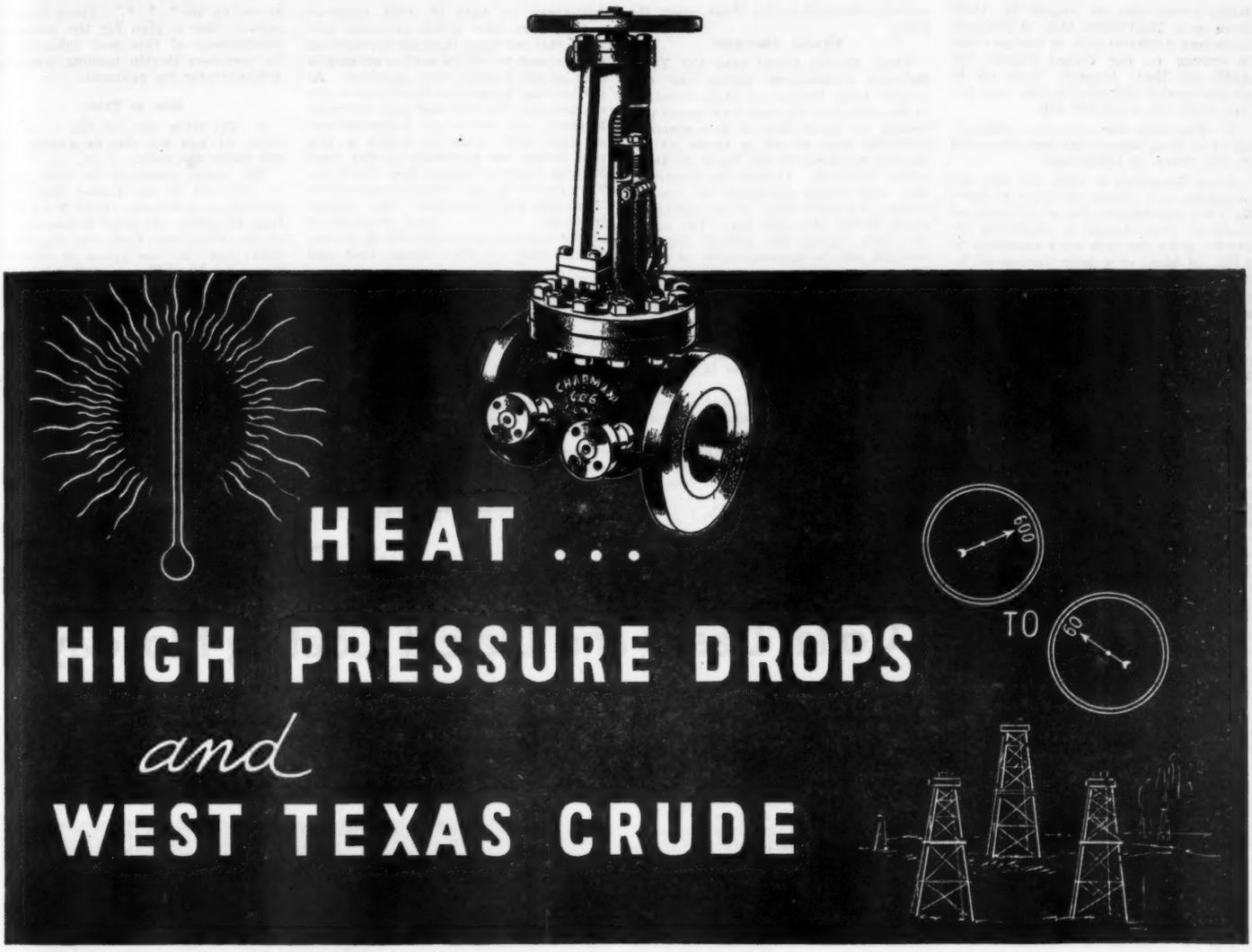
"(a) Whenever upon complaint or upon his own initiative without complaint, the petroleum administrator is of the opinion that an emergency exists within any retail trade area of the industry, in that destructive price cutting is being engaged in to such an extent as to render ineffectual or seriously endanger the effectuation of the purposes of this code or of the National Industrial Recovery Act; the petroleum administrator shall forthwith certify such conclusion to the marketing committees of the Planning and Coordination Committee in the affected areas.

"Upon receipt of such notice, such marketing committee shall as soon as possible call a hearing, upon notice to all known interested parties within the respective trade areas, and endeavor to bring about an agreement for the termination of the destructive price war. Such agreement shall be subject to the approval of the petroleum administrator.

"Pending the determinations of the marketing committee, the petroleum administrator shall cause to be prepared and distributed among marketers within the affected trade area, a schedule of prices for the various grades of petroleum products marketed within said area; this schedule may, in the discretion of the administrator, provide for price differentials between branded and unbranded products.

"This schedule of prices shall be adhered to by marketers in the affected area until it is rendered ineffective by the petroleum administrator's approval of the order of the marketing committee of the area involved.

"In the event that the marketing committee shall not arrive at a solution of the difficulty within a reasonable time to be determined by the administrator, the administrator shall issue his final order superseding his temporary price schedule order."



In a large Eastern refinery handling West Texas crude, the outlet valves between the soaking drums and the flash chambers had to be replaced every few weeks. They couldn't stand the torture of sulphur corrosion, temperatures of 850 degrees and the destructive erosion caused by pressure drops from 600 down to 60 pounds.

Chapman Chrome Tungsten Steel Valves were installed on this "valve killer" cracking process . . . were carefully watched, periodically inspected and checked. At the end of 27 months of continuous operation they showed no effects of this severe service. "They are still going strong at the end of four years," reports the chief engineer of this major oil company.

Chapman makes a complete line of gate valves, globe valves, check valves and fittings for pressures 150 to 1500 pounds and temperatures to 1000 degrees . . . developed for and proved in every Oil Industry application. For long, dependable service, write "Chapman" into your next specifications.

Chapman Valves are distributed from all principal oil centers

The CHAPMAN VALVE MANUFACTURING COMPANY

INDIAN ORCHARD, MASSACHUSETTS

Mines reveal that on August 31, 1933, there were 356,172,000 bbls. of domestic crude and 3,829,000 bbls. of foreign crude in storage in the United States. On April 30, 1934, domestic crude oil in storage totaled 350,825,000 bbls. and foreign crude oil, 3,525,000 bbls.

6. The claim that excessive withdrawals of oil from storage has been permitted in the State of California.

From September 2, 1933, the date the petroleum code became effective, to April 30, 1934, applications for withdrawals of crude oil from storage in California approved under the code have amounted to 2,153,106 bbls., or a daily average of 8,971 bbls. Each withdrawal approval contained a provision requiring the applicant to purchase crude oil from current production if it became available. The actual reduction of crude oil stocks totaled only about 257,000 bbls. (through March, 1934), an average of 1,224 bbls. per day. The daily production allocation to California during this period averaged approximately 450,000 bbls. daily. The opponents were apparently misled by the fact that the total stocks of all oils in California were reduced approximately 18,000,000 bbls., or a daily average of 75,000 bbls., from September 1, 1933, to April 30, 1934. Most of this reduction in stocks of all oils was caused by the withdrawal of approximately 17,500,000 bbls. of heavy fuel oil from storage, or an average of about 72,938 bbls. daily. The code does not authorize any restriction upon the withdrawals of fuel oil from storage. The reason for the heavy withdrawals of fuel oil during the winter months has already been explained. It should be remembered that California is the principal domestic source of supply of fuel oils, and this accounts for the particularly heavy withdrawals made in that state.

Texas Allocations

7. The claim that the Texas Railroad Commission has co-operated with the Federal Government by observing the production allocations made under the code to the State of Texas.

The following figures compiled by Clark Lloyd, statistician for the Texas Railroad Commission, as to the allowable production permitted under the orders of the Commission are illuminating on this point:

(All figures in bbls. per day.)

Date	Federal allocation to Texas	Texas R.R. Commission allowable for Texas	Difference
Jan. 1, 1934..	884,000	868,888	—15,112
Jan. 13, 1934..	884,000	887,874	+ 3,874
Jan. 23, 1934..	884,000	894,502	+10,502
Jan 31, 1934..	884,000	897,091	+13,091
Feb. 1, 1934..	884,000	912,904	+28,904
Feb. 6, 1934..	884,000	925,654	+41,654
Feb. 13, 1934..	884,000	930,881	+46,881
Feb. 28, 1934..	884,000	934,232	+50,232
Mar. 1, 1934..	947,900	940,843	— 7,057
Mar. 13, 1934..	947,900	954,022	+ 6,122
Mar. 24, 1934..	947,900	963,709	+15,809
Apr. 12, 1934..	980,700	990,682	+ 9,982
Apr. 20, 1934..	980,700	990,064	+13,364
Apr. 26, 1934..	980,700	1,013,168	+32,468
May 2, 1934..	980,700	1,023,244	+42,544
May 13, 1934..	980,700	1,032,860	+52,160
May 27, 1934..	980,700	1,039,853	+59,153
June 3, 1934..	1,032,300	1,057,261	+24,961

These figures do not take into consideration "hot oil" produced in excess of the amount permitted by the Texas Railroad Commission.

Since January 1, 1934, the allowable for the East Texas oil field has been fixed on the basis of 5 per cent of its hourly potential. New wells increasing its potential each day have been responsible, according to the figures of Mr. Lloyd, for an increase of its daily allowable from 381,789 bbls. on January 1, 1934, to 498,169 bbls. on June 3, 1934, or an average daily increase in its allowable due to new wells of a little more than 764 bbls. per day. The allowable for all other fields in Texas under the orders of the Texas Railroad Commission are stationary during the period covered by any particular order of the Commission. It is thus seen that the excess allowable of 24,961 bbls. per day on June 3, 1934, is being increased each day to the extent of 764 bbls. At this time, June 11, 1934, therefore, the Texas Railroad Commission by its orders is permitting a production of 31,073 bbls. per day in excess of the amount allocated to the State under the Code.

Excess Allowable

These figures reveal that the Texas Railroad Commission during the five months from January to May, inclusive, of this year have by their own orders permitted the production of approximately 3,500,000 bbls. of oil in excess of the amount allocated to the State of Texas under the code. During the month of May this excess amounted to approximately 1,470,645 bbls., or an average of about 50,000 bbls. per day. The excess for June, unless the present order is changed, will be approximately as great. The amount of this excess will be appreciated when it is remembered that only five of the 18 oil producing states produce as much oil as 50,000 bbls. per day.

8. The charge that the Administrator of the Petroleum Code has restricted drilling in the Cayuga Pool in Texas to seven wells.

Under the code provision is made for the approval by the Administrator of a plan for the development of new pools. The operators in the Cayuga Pool in Texas submitted factual data relative to the development of that pool. The Administrator on April 18, 1934, approved a temporary plan which expressly provided that not more than seven producing wells should be drilled until a permanent plan of development was approved. At the hearings before your committee it was charged that this pool had been restricted to seven wells and it was intimated that no more wells could be drilled in this pool during the remainder of this year. Nothing could be farther from the truth. The approval by the Administrator of the temporary plan contained this express language: "* * * such statement is hereby accepted and approved as a temporary plan for the Cayuga Pool and further extensions thereof, provided that not more than seven producing wells be drilled until a further and permanent plan of development, fulfilling the requirements governing the submission of plans contained in the Regulations of December 20, 1933, be presented to and approved by me * * *." There is at the present time a plan for the permanent development of this pool submitted by the operators therein pending before the Administrator for approval.

		Mid-Continent	Gulf Coast
(1)	June 15, 1933	0.25	0.30
(2)	Aug. 18, 1933	0.50	0.54
(3)	Sept. 30, 1933	1.00	1.04

Rise in Price

9. The claim that the rise in price of crude oil was not due to Federal control under the code.

The posted prices of the basic grades of crude oil in the United States (1) prior to the enactment of the N.I.R.A. on June 16, 1933; (2) prior to the adoption of the Petroleum Code on August 19, 1933; and (3) the prices in effect by September 30, 1933, are given below:

	Indiana-Illinois	Appalachian	Rocky Mountain	California
(1)	0.55	1.37	0.25	0.73
(2)	0.85	2.10	0.54	0.82
(3)	1.30	2.35	1.06	0.97

The average cost of producing a barrel of oil in these areas during the four years of 1927-1930 as reported by the U. S. Tariff Commission is as follows:

Mid-Continent and Gulf Coast	Indiana-Illinois and Appalach'n	Rocky Mountain	California
$1.09	$2.07	$1.23	$1.09

Simple Methods Devised to Repair Pipe Line Collar Leaks and Detect Coating Holidays

By NEIL WILLIAMS

HOUSTON, Tex., June 18. — An ingenious, yet simple and effective method of repairing leaks around collars on pipe lines has been devised by the Humble Pipe Line Co. and is being used by that company on reconditioning jobs now under way. It is doing away with the objectionable features incidental to welding the ends of the collars around the pipe, and, by eliminating the necessity of applying collar wraps in many instances is proving an important saving in cost.

The usual practice of repairing small leaks around collars without replacing collars has been to weld the outer ends of the collars to the pipe. This usually has required the application of such high temperatures to a collar as to cause it to expand, breaking the calking and resulting in larger leaks, although the original leak may have been very small.

In many repairs collar wraps have been used, particularly in the cases of major leaks. These wraps consist of heavy metal pieces shaped to fit entirely over and around the collars and extend out over and around the pipe. Welded around the ends to the pipe they form a single, tight fitting and strong protection but in view of the amount of metal and welding required make a rather expensive repair.

By the method adopted by the Humble Pipe Line Co. only a band of boiler plate is used, this being placed around the pipe at the leaking end of the collar. The band usually is about three-sixteenths inch in thickness, or slightly thinner than the collar, and about 1½ to 2 inches in width, although the width may vary. This is welded to the collar by a small bead around the top. The amount of this weld is very small as compared to the welding of the collar to the pipe and requires very little heat to be applied to the collar, and this only on top. Consequently the collar and the calking is left undisturbed by any expansion.

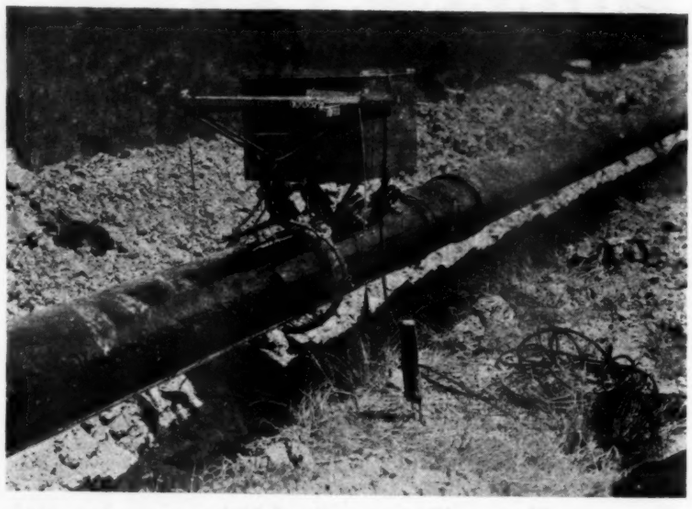
The outer end of the band then is welded to the pipe around the edge, forming a strong, nonleaking connection. As the band consists only of a narrow, comparatively thin strip of metal, which can be fitted easily around the pipe, the cost is very slight.

Reconditioning Lines

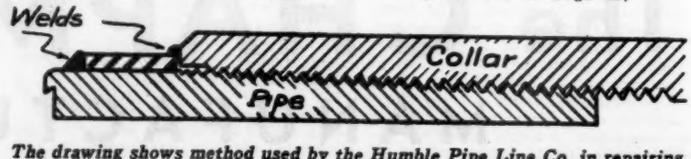
Humble Pipe Line Co. at this time is reconditioning the lines of its trunk line system southeastward out of its Satsuma station, western Harris County, and west of Houston. The system consists of six 8-inch lines. The line being entirely reconditioned is one which has been in since 1924, and which was laid bare. All leaks and weak spots are being repaired and large corrosion pits filled, and the entire line is being coated and wrapped. On the other five lines only hot spots will be raised and reconditioned.

Of some interest in connection with the reconditioning job is the use of an improvised electric holiday detector, to locate spots not adequately covered with the coating application. In use of the detector, a high tension charge is directed to a set of hair wire brushes covering the circumference of the pipe and which, moved along the line, eject a spark when coming in contact with a spot which the coating has not adequately covered. The current is supplied by a small storage battery connected with a high tension coil, which in turn charges the brushes. The coil is grounded, and, as the pipe is grounded, a short is cre-

(Continued on Page 35)



Views of improvised electric holiday detector being used by Humble Pipe Line Co. to locate flaws in the coating of pipe in the reconditioning of its trunk line. The picture shows the brushes in place around the pipe in readiness for operation



The drawing shows method used by the Humble Pipe Line Co. in repairing leaks around pipe line collars. It consists of placing a strip of boiler plate around the pipe at the collar end and welding it to the top of the collar and to the pipe

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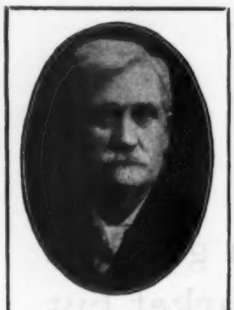

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Better Reasons

It was to be expected, following the failure of Congress to pass the oil bill, there should be renewed talk of a cut in the price of crude. The idea being, of course, that without Federal control East Texas can now go the limit.

There are better reasons for believing the contrary.

The most familiar argument for a crude price cut is that refiners cannot afford to pay present prices for crude while selling gasoline at present prices. The assumption seems to be that crude prices should be cut so gasoline prices can be maintained.

But it never works out that way. When the price of crude is cut it weakens the gasoline market and the first thing we know the crude price cut is followed by a gasoline price reduction.

Take the situation today. If the crude price were cut tomorrow would it strengthen or weaken the gasoline market?

That should be one very good reason why the industry should not wreck its main consuming season by cutting the price of crude now.

Another reason for not being too downhearted is that although Congress failed to pass the oil bill it did order an immediate congressional investigation. Such an investigation of the East Texas situation, conducted on the spot, may well cause the lawless element to be careful instead of blowing off the lid.

As Representative Pettengill, one of the members of the investigating committee, said in the House: "We felt this inquiry would act as a deterrent upon the illegal, bootleg production of oil, that it would be a club behind the door, a notice to the hot oil artists that Congress will act."

The Texas Railroad Commission and other opponents of Federal control will at least have to make a show of making good their promises. There can be no throwing open of the field without complete exposure of the whole business and proof positive of the necessity for Federal control.

At the same time the provisions of the new revenue law levying a tax on oil produced will be rigorously enforced by the Internal Revenue officers, uncovering the facts about production, under severe penalty.

It seems reasonably safe to say that the Railroad Commission, whose orders allowed an overproduction during May of 50,000 barrels daily over the Federal allocation for consumer demand, in the face of an additional overproduction of 50,000 to 75,000 barrels daily of hot oil, will not at this time risk any further great excess that would break down the crude and gasoline markets and cinch the argument for Federal control.

The revenue bureau's requirements will provide records that will make stealing hazardous and to that extent put a damper on hot oil activity.

Meanwhile it remains to be proved that the Federal oil administration is as helpless as has been assumed. The Federal agents are still in East Texas and far from idle. If they are given full co-operation by the industry ways and means of discouraging overproduction can be found that can be effective.

One of the greatest difficulties in combating overproduction has been the indifferent or tolerant attitude of many in the industry who have kept aloof with the thought that nothing could be accomplished, that cheating was so general it was not worth while trying to stop it. Probably a lot of this was true but it does not get anywhere. It is like lieing down to be walked upon.

That is the attitude that brings price cuts—in crude and then in gasoline—instead of thinking things through, taking a line and fighting it out.

We do not think the petroleum administrator and the Planning and Coordination Committee are that kind. They are not going to give up because Congress failed to pass the control bill at this session. And they cannot fail to see that cutting the price of crude at this time would undo all that has been done since the code was started.

The approval of the California agreement, put through in the face of conditions as disheartening and obstructive as in Texas, shows what can be accomplished. If any plan works there why cannot it be adopted for use generally?

Blowing Off Steam

The Darrow report is a curious jumble of fragmentary conclusions. It reminds you of the fellow who took his engine apart and then put it together but had a lot of parts left over.

It starts with the idea that since nobody "put petroleum in the earth" it belongs to all of us like air or sunshine. Does this apply also to coal, iron ore, copper, gold, silver and all other minerals? Mr. Darrow overlooks that these are not produced, manufactured and distributed like air or sunshine.

"A few large companies, perhaps 20, dominate and overshadow the industry," he says, but he admits that notwithstanding industry conditions threaten disaster the control seems utterly unable to suggest a remedy. What sort of control is that?

The report in parts is poor reading for the irreconcilable fringe in the oil business. It praises the work of Administrator Ickes and is strongly against overproduction, vividly describing the "madhouse" in East Texas and calling for enactment of a Federal control law.

Nor would Mr. Darrow stop with control of crude production. He thinks "the small enterprises in the wayside traffic in gasoline are subjected to sudden and arbitrary changes in prices," both those they must pay and those at which they are allowed to sell. His remedy would be price fixing.

When destructive price wars break out the marketing committee of the Planning and Coordination Committee would have to seek an agreement but meantime the oil administrator would schedule prices and if the committee failed to secure an agreement the administrator would issue a final order.

Mr. Darrow's other thought is that the integrated companies must be broken up into separate companies for each branch of the industry.

However, the National Recovery Review Board, of which Mr. Darrow is chairman and of which this is a report on petroleum, is not to be taken seriously. It is merely a sort of safety valve set up to blow off steam.

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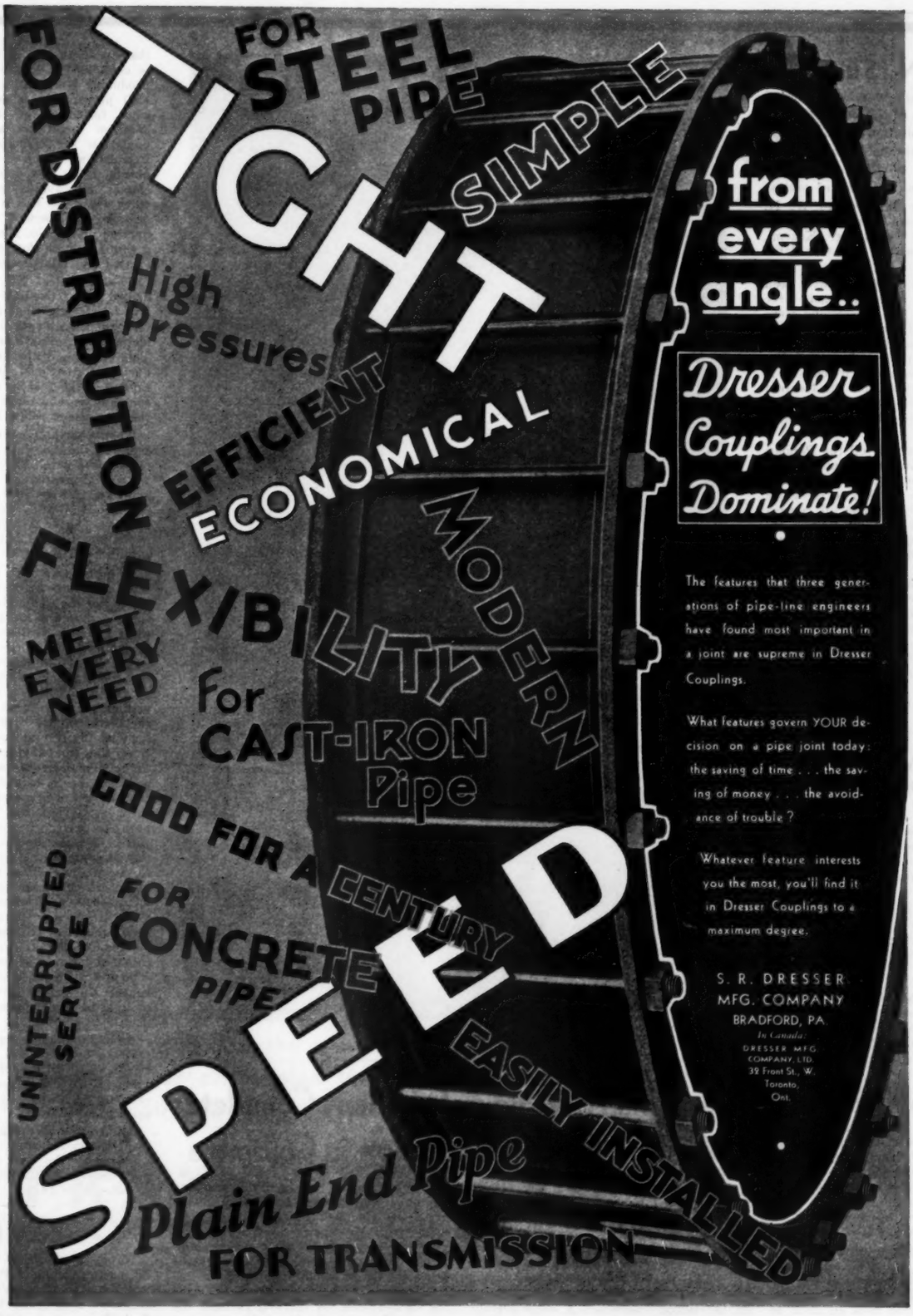
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NEWS FROM FOREIGN LANDS

BAHREIN ISLAND

The Persian government has protested through the League of Nations at Geneva regarding the exploitation of an oil concession on the Bahrein Island by the Standard Oil Co. of California which holds the concession. The note of protest released at Geneva was sent to W. H. Hornobrook, American minister at Teheran and was sent by Bagher Kazemi, Persian foreign minister, and was dated May 22.

The note whose contents have been known in Europe over the past three weeks alleges that the concessions were obtained "illegally from incompetent authorities who had no right to grant such concessions." The protest is not taken seriously in European oil circles. It is based on the contention that the Bahrein Island over which Great Britain has exercised control for several years properly belongs to Persia.

Before the discovery of oil the Persian government made known its position to the British government in regard to ownership but the latter refused to recognize its contentions as valid. The oil concession originally was held by British interests and was acquired by the Standard company in 1930 which immediately started exploration through its wholly owned subsidiary, the Bahrein Petroleum Co., Ltd. Oil in commercial quantities was discovered in June, 1932, and since that time additional wells have been drilled. The present production is reported to be 5,000 bbls. daily with a much larger potential. The Standard company is now completing arrangements to make this oil available in world markets.

GERMANY

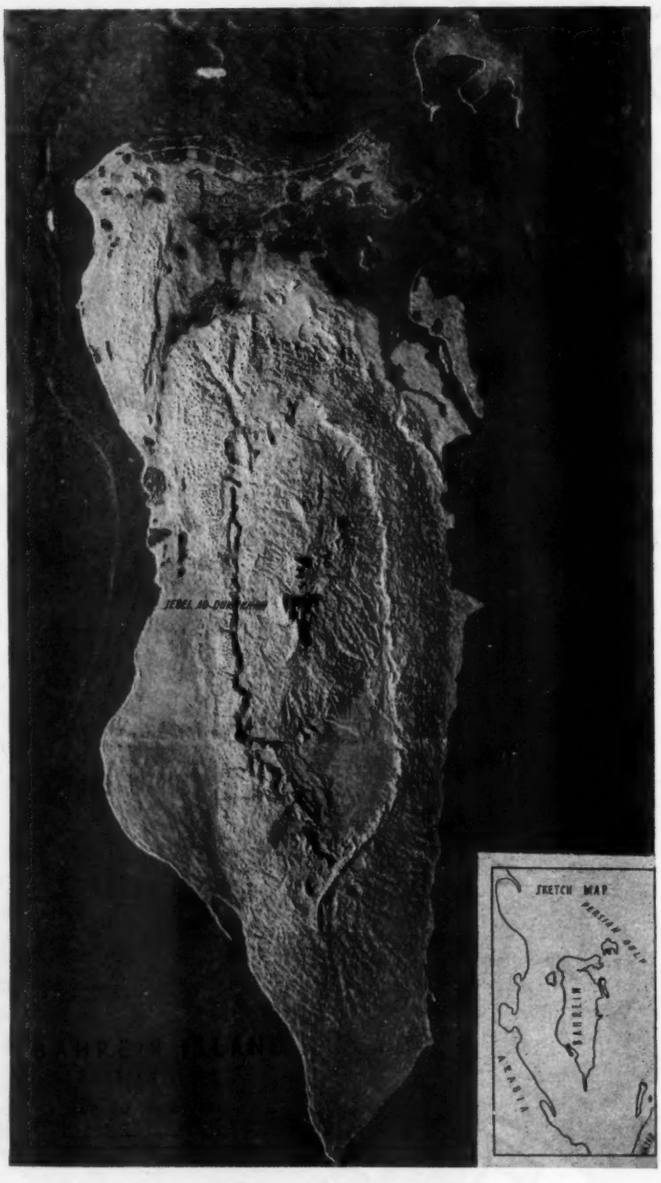
A large increase in the consumption of petroleum products is indicated so far this year based on imports of crude oil and refinery products. This increase is said to reflect the efforts of the present government to stimulate use of motor cars and Diesel engine power in various applications.

Imports of crude oil for the first quarter of this year totaled 46,847 tons or more than double the imports of the same period in 1933. Despite the increase in crude oil, imports of gasoline totaled 235,723 tons, which compares with 169,965 tons the first quarter of 1933. Imports of gas oil increased from 79.132 tons to 116.089 tons. Imports of kerosene, lubricating oil and fuel oil were practically the same this year as last.

FRANCE

The volume of American petroleum products imported in France during 1933 registered a marked increase over 1932, according to the Department of Commerce at Washington. The gain was entirely due to increased purchases of crude oil in United States by owners of the new French refineries.

Receipts of petroleum products from the United States in 1933 totaled 2,159.104 tons which compares with 1,462.964 tons in 1932. Crude oil imports increased from 348.853 tons in 1932 to 1,119,745 tons in 1933. Imports of American gasoline totaled 744,435 tons in 1933 which was 70.000 tons less than 1932. Imports of crude and refinery products into France in 1933 amounted to 5,231,337 metric tons valued at 1,302,230,000 francs against 3,967,890 tons valued at 1,293,584,000 francs in 1932.



Bahrein Island claimed by Persia

Colombian Petroleum Company Completes Well on Barco Concession in Colombia

The Colombian Petroleum Co. (Gulf) has completed its No. 2 Petrolea in the Barco concession of Colombia at a depth of 790 feet. The well, based on a six-hour test, is capable of producing 2,500 bbls. daily of crude oil which has a gravity of 42° to 43° A.P.I. The well is the first commercial producer to be completed in the Barco concession, a large government grant which has attracted wide attention in South American oil operations for several years.

It is understood that officials of the Colombian company do not consider the completion of the well as having any special significance so far as assuring the discovery of a large field. The well is one of several tests which the company has under way at this time which in turn are part of an exploration program which probably will require two or three years to complete before it will be definitely known whether production will be available in sufficient quantities to justify another large expenditure to make the oil available for markets through the construction of a pipe line. The pipe line if built, will constitute one of the most difficult pipe line projects ever attempted. The line will be at least 250 miles long through a jungle country over the Andes Mountains, connecting to some point on the Atlantic Seaboard.

Additional tankage is being built at the site of the No. 2 well and when this is completed a longer test of the well's producing possibilities will be made. The well presumably is producing from the same formation of the North Petrolea dome of the Tarra anticline but lower down on the structure, as the No. 1 Petrolea which blew in unexpectedly in March, 1933, at a depth of 490 feet. The latter well caught fire immediately and when later the fire was put out it was necessary to abandon the test. The production of the No. 2 well is coming from a thin limestone formation. This well is located 1½ miles south of No. 1.

The Petrolea No. 1-A, which was drilled about one-half mile south of the No. 1 after the abandonment of the latter, reached a depth of 3,007 feet, where metmorphic formations were encountered. This test was drilled through several producing formations, including that obtained at 490 feet in the first test. The company is now engaged in testing out the formations below 1,400 feet.

About one-half mile east of the No. 1-A test the No. 4 is drilling at a depth of 300 feet with 12½-inch surface casing set and cemented. A location has been made for the No. 3, 5 miles south of the No. 2. This test will be on the South Petrolea Dome. A location also has been made for the No. 5 test, about 2 miles south of the No. 2.

In accordance with its agreement with the Colombian government, it is the intention of the Colombian company to continue exploration work on the concession until it has been determined whether oil is available in large quantities which would justify intensive development and the construction of the necessary transportation facilities. The company is also making plans to start a test this fall in the northern part of the concession, which includes the Rio de Oro anticline. At this time the company has 200 natives of Colombia, under the supervision of company engineers, engaged in the construction of a road several miles in length through the jungles. The road will connect to river transportation through Lake Maracaibo and will enable the company to get drilling and camp equipment to the drilling site. This is one of the most difficult exploration and development jobs ever attempted in the oil business, in which costs of transporting material and men will far exceed the expenditures for actual drilling. One of the constant hazards of the work is the presence of hostile and barbaric Indian tribes. In the Rio de Oro area a large number of guards are employed at all times to protect the workmen.

The Colombian company is owned 75 per cent by the South American Gulf Oil Corp., which directs the company's operations. A 23.75 per cent interest in the company is owned by the Carib Syndicate, Ltd.

The concession formerly was owned by the Doherty interests, from whom it was acquired by the Gulf company. The Doherty interests drilled one test which was abandoned in 1919.

BELGIUM

Interests associated with "Redeventza" Societate Anonima Pentru Exploatarea Si Comertul Produselor Subsolulu have organized a company to be known as the S. A. Belge pur le Raffinage de Petroles, with headquarters at Antwerp, for the purpose of building a refinery in Belgium. "Redeventza" is one of the important marketing units in Europe and operates a refinery in Rumania. The affiliated interests market extensively in Belgium.

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Fear of General Decline in Crude Price Drives Mid-Continent Gasoline Quotations Down

By W. T. ZIEGENHAIN

Peering from behind weakened fences Oklahoma refinery sales managers are focusing their eyes upon the course of events in East Texas. Success or failure of plans designed to raise the East Texas gasoline price promises to play an important part in shaping the trend of all Mid-Continent gasoline prices. Buyers and sellers are making no attempt to outguess results of this endeavor market-wise, but continue to remain on the side lines, with more of them filled with hopes than believing that any buying plan will prove permanently beneficial.

During the past week this lack of interest in the market has permitted refinery gasoline prices to drop off sharply and natural gasoline prices have been cut in half within the space of one week. Bright stocks have declined 1 cent and about the only encouraging news comes in the form of a one-half cent advance which was posted on neutrals late last week.

Refined Oil Market Barometer

Declining refined oil prices are being reported from all areas east of the Rockies. Refinery and natural gasolines witnessed serious reductions in the past week throughout the Mid-Continent while bright stocks and cylinder stocks acted as the principal weak spots in the East Coast and Pennsylvania markets. Success of a plan of major company buying in the East Texas Field will determine course of Mid-Continent gasoline market over immediate future. Export trade has declined to force more on local markets.

Mid-Continent.—Natural gasoline price cut in half during week. Refinery gasoline weak. Bright stocks and cylinder stocks down 1 cent. Neutrals continue strong despite price advance.

East Coast.—Reduced prices on cylinder stocks and bright stocks added weight to the generally dull market.

Chicago.—The relatively few orders available drew greatly reduced prices from refiners on gasoline. Kerosene and distillates weak.

California.—Gasoline weaker. Fuel oil continues to move in large quantities and prices are firm.

Pennsylvania.—Bright stocks and cylinder stocks off 1 cent. Balance market generally weak.

Gulf Coast.—No price changes with trading dull.

Gladewater Meeting

This plan referred to above as designed to raise East Texas gasoline prices will be discussed at length in Gladewater, Tuesday night. It will probably be the composite of two tentative plans outlined several days ago by Howard Bennette, national co-ordinator, and the suggestions he and A. V. Bourque receive after they have spent several days of investigation in the East Texas area, where they have been since Friday. All refiners in the East Texas area will be asked to attend the Tuesday meeting and their support of the program to be developed is considered all-essential.

In general, the program will provide for the purchase of existing stocks of gasoline in the East Texas area by the major refiners of the country. These refiners apparently are in agreement to do this as the result of clearance given the idea by the P. and C. committee after an understanding was reached with the Federal administration. They had feared prosecution under the hot oil order of President Roosevelt and refused to assume the responsibility of determining whether the crude from which the stored gasoline was made was "legal" or "illegal." These refiners will also promise to keep the East Texas Field cleared of distress gasoline for an indefinite period. All of this will be done with the provision that East Texas refiners hold their gasoline production within the figure set by the Federal allocator from time to time. At present these plants are producing close to 30,000 bbls. of gasoline daily.

To start with, a price of about 4 cents will be paid for the stocks and every effort will be made to bring the price to 5 cents as material is purchased from current production. Advocates of the plan believe that the 5-cent price will be reached by the end of June if full cooperation is secured from the rank and file of the 84 refiners in East Texas.

Consideration has been given to the idea of paying the East Texas refiner 5 cents for the stocks but holding 25 per cent of the money in escrow pending success of the plan in establishing the general market at 5 cents or better. At this rate the refiner will receive 3¾ cents immediately, which is about one-half cent more than he is getting on the spot market today. Students of the East Texas market are dubious of the success of this method of payment, however, if it is intended to act as a club to hold gasoline production in line. They believe that a large enough number of East Texas refiners will offer gasoline consistently at 3¾ cents and without thought of actually getting the 5 cents promised to cause the efforts of the pool to be ineffectual.

Retail Gasoline Market

The retail gasoline market is showing further weakness, particularly in the Middle West. Under some forms of contract, margins are given to the station operator that nets the refiner 1 cent or less for his gasoline at the plant. This is particularly true in the Kansas City and St. Louis districts. In general, there appears to be more new price wars than wars settled, except in the California area where conditions seem to have been improved over the past week.

Gasoline Prices

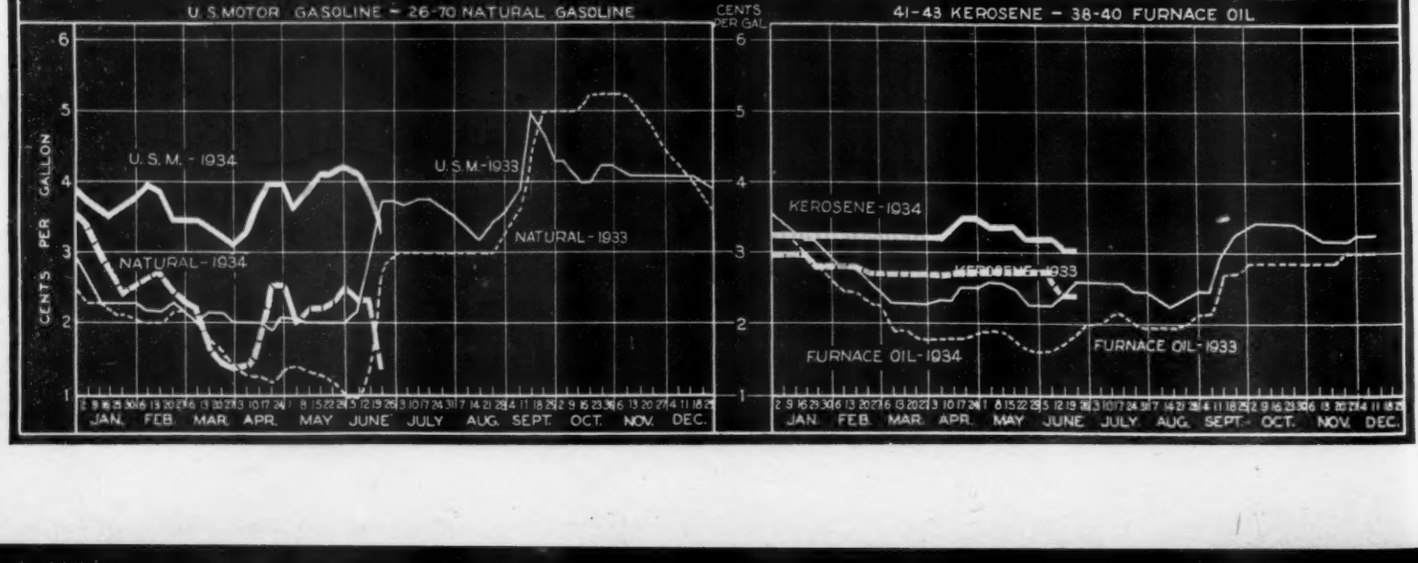
Many Oklahoma refiners refused to quote prices on gasoline for the spot market in order to compete with the 3¼-cent (basis Group 3) material available in East Texas. The business went to the Oklahoma refiners who took what the market afforded and received 3⅜ to 3⅝ cents, but such orders had to carry instructions for immediate shipment. The above price applied to the material below 60 octane and refiners were able to maintain a better relative market for their grades above 60 octane. The latter grades sold off about one-eighth cent in contrast with the reduction of one-half cent in the low octane material.

Natural Gasoline

Natural gasoline prices suffered a severe setback in the past week, the market being relatively inactive. Also, there

(Continued on Page 32)

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)


36 GR. MIDCONTINENT CRUDE
DOLLARS PER BARREL
1934
1933
CENTS PER BBL GAL
16 GR. FUEL OIL — U.G.I. GAS OIL
GAS OIL - 1934
GAS OIL 1933
FUEL OIL - 1934
FUEL OIL - 1933
U.S. MOTOR GASOLINE — 26-70 NATURAL GASOLINE
CENTS PER GALLON
U.S.M. - 1934
U.S.M. - 1933
NATURAL - 1934
NATURAL - 1933
CENTS PER GAL
41-43 KEROSENE — 38-40 FURNACE OIL
KEROSENE - 1934
KEROSENE - 1933
FURNACE OIL - 1934
FURNACE OIL - 1933
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

Eastern Refined Oil Markets Unsettled; Prices Weaker as Industry Watches East Texas

By C. O. WILLSON
New York Bureau, The Oil and Gas Journal

NEW YORK, June 18.—Developments which in most cases had nothing to do with the immediate situation in regard to supply and demand for petroleum products, served to unsettle refinery markets over the past week and the few price changes which became effective during the seven-day period were on the down side. The most important decline in prices applied to bright stocks and steam refined stocks with reductions also made effective in neutral oil by some of the sellers.

Part of the bearishness in the market was due to the assumption by a majority of the trade the latter part of last week that the crude oil control bill would not be passed in this session of Congress and this support of the markets which many thought was necessary to prevent a further overproduction of crude oil and gasoline, was dropped from consideration. This unfavorable development was coupled with daily reports from the Mid-Continent that the gasoline market was weakening. The latter weakness centered in East Texas and this was interpreted to mean lower prices at the Gulf Coast terminals and refineries. In fact cargo material for shipment to East Coast points was quoted one-fourth cent under the prevailing market of the first days of June. While some were inclined to consider the unfavorable developments as temporary in importance, others were more concerned as to a possible collapse in the industry's markets, than any time this year.

It is conceded here that unless refinery prices, particularly gasoline, can be maintained at present or higher levels, certain important factors in crude oil markets will not be inclined to support the crude price structures which have been effective in all parts of the country since the early fall of last year. Certain executives have said publicly and others privately that refinery and consumer prices for several months have not justified the prevailing crude markets and have indicated that unless a more equitable relationship is obtained the only alternative is a reduction in posted crude oil schedules. It is feared that such a development could easily bring about a condition in which part or all of the ground gained as regards prices under the government control will be lost. On the other hand there are those who are equally confident that some means will be found to cope with this latest emergency and prices maintained at present or higher levels.

Buying Distress Gasoline

Some claim that the apparent weakness in the gasoline market is due to the failure of certain major companies to do their part in the recent buying movement in which an effort was made to keep distress material from accumulating in East Texas. A few refining companies during May did buy around 3,000 cars of gasoline but others refused to participate and they have been charged with responsibility for the weakness which has developed in the Mid-Continent market since the first of June.

The original buying agency plan, first suggested last fall, in which a pool was to be formed to buy distress gasoline from time to time with all the major companies participating was never approved by the Department of Justice and due largely to that fact has never been tried out. The Planning and Coordination Committee recently suggested that the companies which had agreed to participate in this agency plan, restrict their own operations so that they would buy gasoline from other refiners amounting to at least 3 per cent of their total requirements. While there has not been any general acceptance of this plan, certain companies did purchase from other refiners and this buying largely accounted for the strength shown in the Mid-Continent market during May which in turn permitted the recent price advances in this territory.

In regard to inter-refinery buying for the purpose of supporting markets there are those who have opposed similar efforts in the past contending that they are inherently wrong in principle and at best have never given anything but temporary aid to the industry. In the present case they maintain that buying East Texas gasoline at present prices accomplishes nothing on the constructive side and simply make the "hot" oil operations more profitable.

If the "hot" oil operations were eliminated and the legitimate production brought within the Government's allowables, they contend that the real source of trouble would be ended and there would be no need of buying distress gasoline for the reason that none would be available. Other market students disagree with this view as to fundamental conditions in the industry as they apply to markets. They feel that with approximately 200 separate refining organizations operating 475 plants it is inevitable that surpluses accumulate from time to time among the smaller organizations. They take the position that the remainder of the industry constituting the great bulk of the investment can well afford to buy this gasoline acting individually or through pools and prevent this excess gasoline being dumped on spot markets with resulting reductions in prices to the entire industry.

"Hot" Oil Operations

The attitude of the trade here now is to mark time until it has been determined if government control can adequately cope with the present situation without the additional legal aid which was to come from the administration's control bill. Emphasis is placed on a better control of the "hot" oil production in East Texas as the immediate threat to crude oil and gasoline prices.

Some observers believe that before the end of the month the market significance of the curtailed refinery operations for June will become apparent. This curtailment, it is contended, will more than offset any increase in operations based on larger quantities of "hot" oil and with the seasonal increase in demand will bring about a substantial reduction in stocks and also force some companies to buy from other refiners. It had not been determined at this writing just how effective the Government's refinery curtailment program for the entire country has been but in this particular section it is known that several refiners are running less crude to stills than they did in May despite an increase in demand.

Prices

Several manufacturers of steam refined stocks and bright stocks have reduced their quotations from 1 to 2 cents per gallon. However, one of the largest manufacturers has not changed its quotations since early in the year. This particular company absorbs most of its output through its own operations and those of its subsidiary and affiliated companies and has not been selling on the spot wholesale markets where there has been tendency toward weakness since early May. The weakness after an exceptionally strong market period extending over the latter part of 1933 and the forepart of this year is apparently due to an increased supply and a falling off in demand. During the period of advancing prices, some buyers including exporters, bought in excess of immediate requirements and have reduced their spot purchases in recent weeks.

In the export markets, Pennsylvania Grade steam refined stocks in barrels are from 1 to 2 cents lower. The 600 steam refined unfiltered is quoted in this market as low as 24 cents and 600 flash, 27 cents. The No. 8 bright stock is quoted over a wide price range with sales over the past week reported as low as 35 cents. Bulk prices for domestic movement are 6 to 8 cents per barrel under the quotations in barrels. Neutral oils are relatively stronger than cylinder stocks in this market although several companies have reduced their prices on several grades. The 200-3 low cold test neutral (Pennsylvania Grade) in bulk is quoted from 30 to 33 cents per gallon.

The general quotations on gasoline in this market are unchanged from last week, the usual quotations ranging from 6 cents for low octane to 6½ cents for 65 octane and above. Low octane material is reported to be available at the Gulf Coast under 5 cents which means a price of around 5¾ cents at New York if large quantities become available for coastwise movement. Refiners report an improved movement on contracts to their jobbers and the demand has also improved from their company-owned facilities.

Kerosene demand is slow with quotations ranging from 5¼ to 5½ cents in this market. Activity in furnace oil distillates is largely confined to contracts with jobbers and consumers. The amount of actual contract business closed with consumers for the coming year is less than last year. Many users of domestic burning oils who have had low priced oil over the past three seasons at flat prices object to the new contracts with

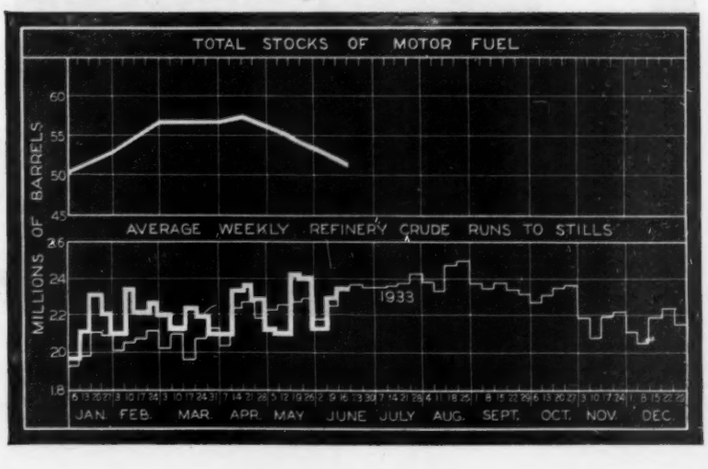
(Continued on Page 30)

American Petroleum Institute Weekly Refinery Statistics

Week Ending June 16, 1934

	Capacity reporting per cent	Daily crude runs (bbls.)	Finished motor fuel (bbls.)	Gas oil and fuel oil (bbls.)
East Coast	100.0	494,000	16,359,000	7,784,000
Appalachian	93.3	98,000	1,665,000	863,000
Indiana, Illinois, Kentucky	94.6	344,000	8,410,000	3,061,000
Oklahoma, Kansas, Missouri	83.7	245,000	5,396,000	3,221,000
Inland Texas	47.6	93,000	1,091,000	1,895,000
Texas Gulf	97.5	452,000	4,415,000	6,264,000
Louisiana Gulf	96.4	117,000	1,254,000	1,279,000
North Louisiana and Arkansas	83.7	56,000	283,000	460,000
Rocky Mountain	66.7	43,000	1,098,000	642,000
California	96.9	433,000	12,424,000	78,794,000
Total United States	89.7	2,375,000	52,395,000	104,263,000

Note: Finished motor stocks shown in graph and in table include those at refineries, at bulk terminals and in pipe lines, but do not include 5,000,000 to 7,000,000 bbls. of unfinished gasoline which could be reprocessed quickly.



Automatically Operated Pour Test Chilling Cabinet Promotes Accuracy, Saves Money

By W. T. ZIEGENHAIN

To promote accuracy and economy and to facilitate prompt pourpoint determinations when samples of lubricating oils are brought to the laboratory in large numbers, the Mid-Continent Petroleum Corp. has installed a cooling cabinet and refrigerating system that has proved exceptionally effective.

The accompanying picture shows the complete unit, including the automatically controlled electric switch boxes, the ammonia compressor and one of the four covers which may be placed over those sections of the box not in use.

The box was built by Al Henderson, Inc., of Tulsa according to specifications outlined by H. T. Bennett and W. L. Thompson of the Mid-Continent with particular attention paid to the detailed procedure outlined by the A.S.T.M. for making pourpoint determinations. Experience thus far has indicated that approximately twice the number of samples may be tested over a given time compared with the number tested when the conventional cracked ice and pan apparatus is used.

The automatically controlled box proves unusually valuable to the Mid-Continent because of the large number of samples to be tested for plant control the first thing each morning and in the afternoon there is a rush to check samples taken from cars to be shipped that same day.

Any refinery which is faced with the problem of making a large number of determinations quickly would find this new equipment practical and economical. Because the box is automatically controlled and operates day and night in a manner similar to an electric refrigerator in a home, a pour test may be made at any hour without need for going through the usual procedure of cracking ice, preparing the salt and waiting for adequate cooling of the apparatus.

Procedure of Test

In the course of routine testing the samples are first cooled in a bath of ice and water to about 50° F. The samples are then placed in the box. The box is divided lengthwise into two independent sections, each accommodating a single row of eight receptacles or wells. The receptacles on the one side are immersed in a calcium chloride bath held at zero to plus 5° F. and the bath on the other side is held between minus 30 and minus 25° F. The temperature is actually controlled within a range of but 2 degrees.

It has not been found necessary to use temperatures below those stated here but at a plant where abnormally low temperatures are required such as those needed for making pourpoint determinations on oils of minus 30 or 40 pourpoint, a third compartment could be built into the unit.

Any sample with an expected pourpoint below the range of the first compartment is transferred from the first compartment to the colder compartment when the temperature of the oil drops to plus 20.

Before discussing the actual construction of the unit, mention should be made of a few operating details that influenced the design. In the picture it will be noted that the monel metal covering for the top does not extend down into the trough. This was found advisable in order to eliminate frosting of the sides of the trough. The exposed wood, insulated with 6 inches of rock wool eliminates all "frost creep." Some frost does accumulate around the tops of the recessed iron wells but it is necessary to defrost only about once a month.

The automatic control switches are in routine use but if for some reason they were found to be giving erroneous results or become inoperative, the wiring has been arranged to permit hand control. A small thermometer is recessed in the trough of each compartment and is immersed in the calcium chloride brine to act as a check on the automatic control mechanism.

Brief Description of Unit

The cabinet is refrigerated by a half-horsepower Model 50 Jr. Lipman ammonia compressor, with an ice melting capacity of 250 pounds or 36,000 B.t.u. per 24 hours. The liquid capacity of the ammonia receiver is 6 pounds.

The two test tanks into which the receptacles are welded are constructed of 6-inch extra heavy casing with ends welded closed. The 16 test wells are made of 2-inch extra heavy nipples having welded bottoms. A filler hole is left open to permit adding calcium chloride brine that is lost due to evaporation, but the volume is very small.

The actual ammonia refrigerating coils are made up of 18½ feet of half-inch extra heavy steel pipe bent to fit around the test wells and is submerged in the brine.

The warmer test tank, operating from zero to plus 5° F., is controlled by a solenoid valve actuated by a thermal operated switch. The suction line to the compressor closes when a temperature of zero is reached, and opens again when the bath reaches plus 5°. Actual refrigeration is accomplished through a three-eighths inch Alco thermal operated automatic expansion valve set to close on an 8-pound pressure giving an actual coil temperature of minus 11.8°. The colder test tank is operated from minus 30° to minus 25° and is connected directly to the suction line of the compressor with a check valve in the line that closes when the solenoid valve on the warmer opens, thus keeping the warmer gas from the warmer test tank from rushing into the colder tank and condensing. The same type of expansion valve is used on this tank as the warmer but is set to close on 4-inch vacuum, giving an actual coil temperature of minus 33.1° F.

The Lipman compressor operates approximately 60 per cent of the time under actual working conditions. The one-half horsepower G.E. single phase 110-220 volt motor pulls 190 watts per hour and the water consumption is about one-half gallon per minute.

Recessed in the pour test chilling cabinet are the two rows of steel wells. The row on the left is immersed in a calcium chloride bath automatically held between zero and plus 50°F. The row to the right is held in a bath of 25 to 30°F. The automatic switches are housed in the boxes shown in the foreground. The compressor is shown on the floor to the right under the samples of oil awaiting testing

Congressional Investigating Committee Is Named

(Continued from Page 9)

The chairman of the committee or any member thereof may administer oaths to witnesses."

The House at the same time passed a resolution (H. Res. 442) authorizing an appropriation of $25,000 to defray the expenses of the investigation.

Oil Code Appropriation

The Senate on Friday inserted the following paragraph in the Deficiency Appropriation Bill:

"For administering and enforcing the provisions of Section 9 (c) of the National Industrial Recovery Act, approved June 16, 1933 (49 Stat. 195), and the Code of Fair Competition for the Petroleum Industry approved pursuant to the authority of said act, and for other purposes relating to the regulation of commerce in petroleum, to be allocated by the President, and to include necessary personal services in the District of Columbia and elsewhere without regard to the civil-service laws and regulations, traveling expenses, rent, and not to exceed $2,750 for books and periodicals, not to exceed $48,000 for the purchase, hire, maintenance, operation and repair of motor-propelled passenger-carrying vehicles, not to exceed $20,000 for the maintenance, operation and repair of four motorboats and not to exceed $60,000 for a survey of the effect of the code on labor conditions in the petroleum industry, fiscal year 1935, $2,096,000."

West Coast Control Plan

Secretary Ickes, Oil Administrator, is expected to approve, within the next day or two, the plan for control of the industry on the West Coast. Approval of the Attorney General has been obtained, and it is now before the Administrator for his signature. In announcing his approval, the Attorney General stated that the consent decree, which blocked the operation of the original cartel for that section of the country, would be modified to allow the carrying out of this agreement. He also said that a committee of three would be appointed by Secretary Ickes to watch the functioning of this plan, to hear complaints, receive reports, and generally supervise the arrangement.

Signatories to the plan, who comprise every refinery operator, with one exception, on the West Coast, under the agreement must abide by the provisions of the code, and shall not become parties to monopolies, nor shall they indulge in any other unfair trade practices.

These provisions, which the Attorney General inserted, have the approval of the various interests of the industry. "They will be beneficial in assisting in the curtailment program, in the payment of higher wages and in the prevention of the destruction of small enterprises which are under present conditions unable to stand the pressure of cut-throat competition," stated the attorney general in announcing his approval of the plan as modified.

As now agreed upon, the plan will guarantee to the independents an adequate supply of crude oil and also a market for the gasoline produced from that crude. It will prohibit the use in refinery operations of oil that is produced in excess of allowable production.

Natural Gasoline Market

The Natural Gasoline subcommittee of the Planning and Coordination Committee has been meeting for several days with representatives of the Refinery Subcommittee and the National Coordinator, Howard Bennette, in an effort to find some means of stabilizing the natural gasoline market. A solution of this problem is expected in a couple of days as several plans are being considered.

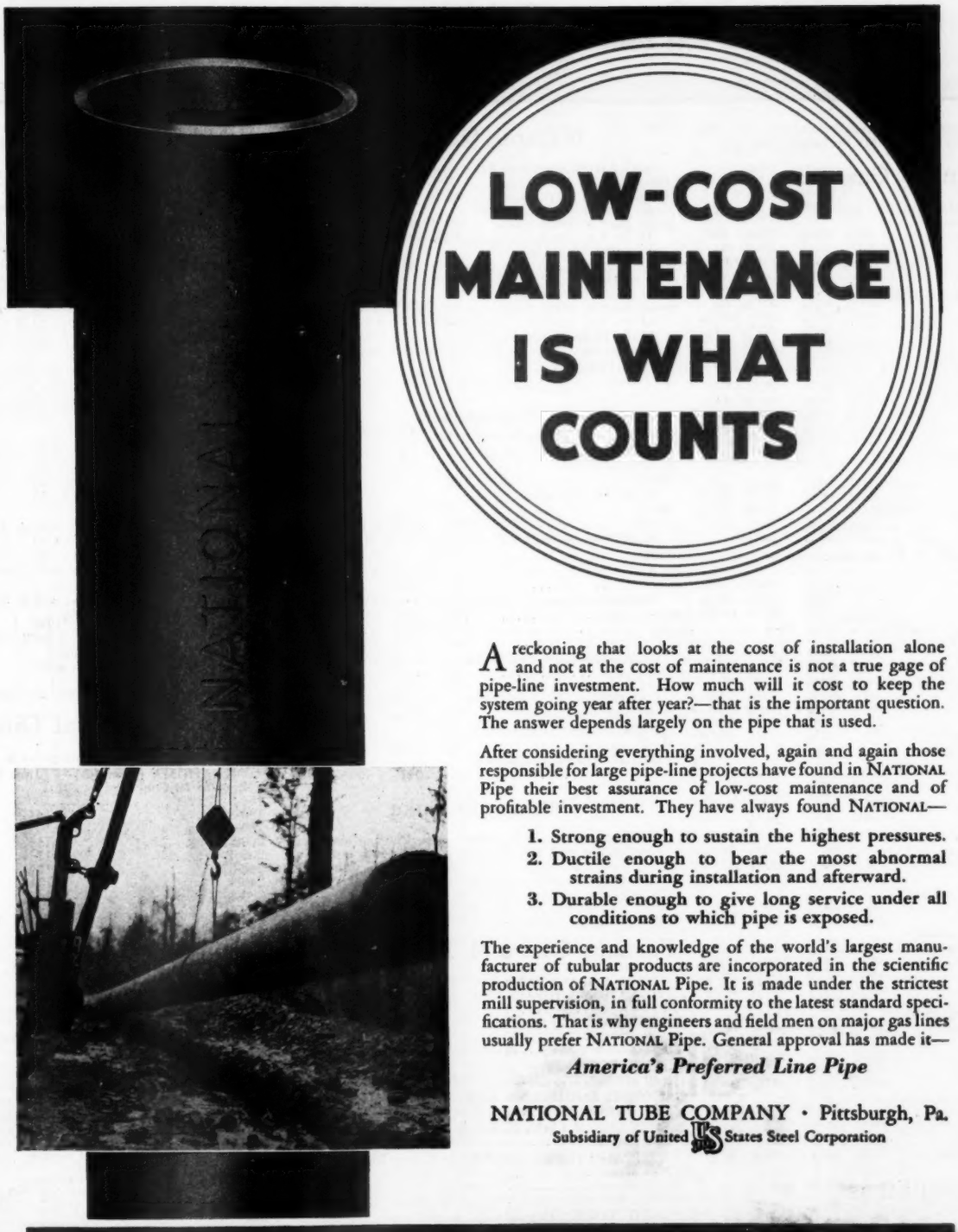
Montebello Development Plan

Secretary Ickes Saturday announced that he had approved a plan of development for the Cruz Pool of the Montebello oil field in Los Angeles County, California. Under the plan as approved it is provided that "to insure wider spacing of wells and properly to protect the correlative rights of all parties having an interest in the pool, January to June, inclusive, and July to December, inclusive of each year shall be considered separate development periods, and on or before June first and December first of each year the operators must submit to me (Administrator Ickes) for my approval, a plan for well locations to be drilled during the ensuing six month periods." No action on any proposed wells shall be taken until approved by the administrator.

No location for a well will be approved which does not conform, insofar as possible, to a spacing program of not more than one well to 10 acres. Wells shall be so drilled that the location in the productive horizon shall conform as nearly as practicable to the location on the land surface. Each operator shall be entitled to develop his property, or properties, at the same rate in proportion to his acreage holding as any other operator.

The following wells now completed, being drilled or prepared for drilling are considered to have been located in accordance with a well location plan and are approved: Community Oil Co., Well No. 1, Maybelle Haas. Standard Oil Co. of California, Well No. 19 Temple, Well No. 20 Temple, Well No. 74 Baldwin, Well No. 75 Baldwin. St. Helens Petroleum Co., Ltd., Well No. 6 Piuma-Briana. Texas Co., Well No. 4 Barry, Well No. 12 Baldwin, Well No. 10 Prugh. Universal Consolidated Oil Co., Well No. 1 Cruz C-1, Well No. 1 Alvitre 1, Well No. 1 Repetto.

In addition to these wells now being drilled or prepared, the following companies may drill not more than one well during the period January 1 to June 30, 1934: Republic Petroleum Co., Shell Oil Co., Standard Oil Co. of California, St. Helens Petroleum Co., Ltd., and Union Oil Co. of California. However, the operators shall not begin operations on any of the approved wells until the location is approved by the Administrator.



LOW-COST MAINTENANCE IS WHAT COUNTS

A reckoning that looks at the cost of installation alone and not at the cost of maintenance is not a true gage of pipe-line investment. How much will it cost to keep the system going year after year?—that is the important question. The answer depends largely on the pipe that is used.

After considering everything involved, again and again those responsible for large pipe-line projects have found in NATIONAL Pipe their best assurance of low-cost maintenance and of profitable investment. They have always found NATIONAL—

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2. **Ductile enough to bear the most abnormal strains during installation and afterward.**
3. **Durable enough to give long service under all conditions to which pipe is exposed.**

The experience and knowledge of the world's largest manufacturer of tubular products are incorporated in the scientific production of NATIONAL Pipe. It is made under the strictest mill supervision, in full conformity to the latest standard specifications. That is why engineers and field men on major gas lines usually prefer NATIONAL Pipe. General approval has made it—

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NATIONAL TUBE COMPANY · Pittsburgh, Pa.
Subsidiary of United States Steel Corporation

NATIONAL PIPE

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

Quotations are exclusive of the Federal tax of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasolines

	June 19		June 12	
OKLAHOMA (Group 3)—				
U. S. Motor grades:				
Below 60 octane	.03¾	.03⅝	.03⅞	.04⅛
60-64.9 octane	.04½	.04¾	.04⅝	.04⅞
65-70 octane	.04¾	.05	.04⅞	.05⅛
60-62 400 grades:				
Below 60 octane	.03½	.03¾	.04⅛	.04¼
60-64.9 octane	.04⅝	.04⅞	.04⅞	.05
65-70 octane	.04⅞	.05⅛	.05	.05⅛
64-66 375	.04	.04¼	.04¼	.04½
68-70 360	.04¼	.04⅜	.04⅜	.04⅝
NORTH TEXAS—				
U. S. Motor grades:				
Below 60 octane	.03¼	.03½	.03¾	.04
60-64.9 octane	.04¼	.04½	.04½	.04¾
65-70 octane	.04⅝	.04⅞	.04¾	.05
60-62 400	.03⅝	.03⅞	.04	.04⅛
64-66 375	.04	.04⅛	.04¼	.04¼
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
U. S. Motor grades:				
Below 60 octane	.04	.04¼	.04⅜	.04⅝
60-64.9 octane	.05⅛	.05⅜	.05¼	.05⅜
65-70 octane	.05¼	.05½	.05⅜	.05⅝
60-62 400	.04¼	.04⅜	.04⅜	.04⅞
68-70 360	.04¼	.04⅜	.04½	
ARKANSAS (Ark., N. La. & Miss. del.)—				
U. S. Motor grades:				
Below 60 octane	.04	.04¼	.04⅜	.04⅝
60-64.9 octane	.05⅛	.05⅜	.05¼	.05½
65-70 octane	.05¼	.05½	.05⅜	.05⅝
CHICAGO (based on Oklahoma Group 3)—				
U. S. Motor grades:				
Below 60 octane	.03½	.03¾	.04	.04¼
60-64.9 octane	.04⅜	.04⅝	.04½	.04¾
65-70 octane	.04⅝	.04⅞	.04¾	.05
60-62 400	.03⅝	.03¾	.04⅛	.04¼
64-66 375	.04½	.04¼	.04¼	.04½
68-70 360	.04⅜	.04½	.04½	.04⅝
Aviation fighting grade	.05	.05¼	.05⅛	.05¼
PENNSYLVANIA (inland refineries)—				
58-60 U. S. Motor:				
Below 60 octane	.05⅝	.05¾	.05⅝	.05¾
60-64.9 octane	.06½	.06⅝	.06½	.06⅝
65-70 octane	.07	.07⅛	.07	.07⅛
68-70 350	.06½		.06½	
CALIFORNIA (domestic movement)—				
54-58 U. S. Motor	.05	.06	.05½	.06½
58-60 400	.06	.07	.06¼	.07
EAST COAST—				
U. S. Motor, below 60 octane:				
New York	.06	.06¼	.06	.06¼
Baltimore	.06	.06¼	.06	.06¼
U. S. Motor, 60-64 octane:				
New York (Bayonne)	.06¼	.06½	.06¼	.06½
Philadelphia	.06½	.06¾	.06½	.06¾
Boston	.0645	.0670	.0645	.0670
Baltimore	.06¼	.06½	.06¼	.06½
Charleston, S. C.	.06¼	.06½	.06¼	.06½
U. S. Motor, 65 and above:				
New York (Bayonne)	.06½	.06¾	.06½	.06¾
Philadelphia		.06¾		.06¾
Boston	.0670	.07	.0670	.07
Baltimore	.06½	.06¾	.06½	.06¾
Charleston, S. C.	.06½	.06¾	.06½	.06¾
GULF COAST (domestic)—				
U. S. Motor:				
Below 60 octane	.04¾	.05	.04¾	.05
60-64.9 octane	.05	.05¼	.05	.05¼
65 octane and higher	.05¼	.05½	.05¼	.05½

Naphthas

	June 19		June 12	
PENNSYLVANIA (inland refineries)—				
50-54 430-450 (blending)	.04		.04⅜	
CHICAGO (based on Oklahoma Group 3)—				
50-52 450 (blending)	.04	.04¼	.04	.04¼
Cleaners' naphtha, 50-58 gr., 200 i.b.p.-330 e.p.	.06¾	.07	.06¾	.07
Lacquer diluent, 180 i.b.p.-250 e.p.	.07¾	.08	.07¾	.08
Lacquer diluent, 140 i.b.p.-200 e.p.	.08¾	.09	.08¾	.09
Rubber solvent, 68-70 gr., 100 i.b.p.-330 e.p.	.06¾	.07	.06¾	.07
Stoddard solvent, 300 i.b.p.-410 e.p., over 83° flash	.06¼	.06½	.06¼	.06½
Pet. thinner, 290-300 i.b.p.-415 e.p., over 83° flash	.06¼	.06½	.06¼	.06½
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p.	.06¾	.07	.06¾	.07
Petroleum spirits	.05¾	.06	.05¾	.06

Natural Gasolines

	June 19		June 12	
OKLAHOMA (Group 3)—				
Grade 26-70	.01⅜	.01½	.02⅜	
Grade 18-55	.01¾	.02	.03	.03⅛
Low vapor pressure grades:				
15 lb. v.p. (max.)	.02⅜	.02½	.03⅜	.03½
11 lb. v.p. (max.)	.02¾	.03	.04	.04¼
NORTH TEXAS—				
Grade 26-70	.01¼	.01⅜	.02¼	
Grade 18-55	.01¾		.02¾	.02⅞
Low vapor pressure grades:				
15 lb. v.p. (max.)	.02¼	.02½	.03¼	.03⅜
11 lb. v.p. (max.)	.02⅝	.02⅞	.03⅜	.04
NORTH LOUISIANA—				
Grade 26-70	.01⅞	.02	.02⅞	
CALIFORNIA—				
75-78 375	.05¼	.06	.05¼	.06

Kerosenes

(All kerosenes water white)

	June 19		June 12	
OKLAHOMA (Group 3)—				
41-43	.03⅛	.03⅜	.03⅛	.03½
42-44	.03⅜	.03⅝	.03⅜	.03¾
NORTH TEXAS—				
40-41	.02⅞	.03⅛	.03	.03¼
41-43	.03	.03¼	.03⅛	.03⅜
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
41-43	.03¼		.03¼	.03⅜
ARKANSAS (Ark., N. La. & Miss. del.)—				
41-43	.03⅜	.03½	.03½	.03⅝
PENNSYLVANIA (inland refineries)—				
45	.04⅝	.04⅞	.04⅝	.04⅞
49	.04¾	.05⅛	.04¾	.05⅛
47	.05	.05¼	.05	.05¼
CHICAGO (based on Oklahoma Group 3)—				
41-43	.03⅛	.03¼	.03¼	.03½
42-44	.03¼	.03½	.03½	.03⅝
CALIFORNIA (Pacific Coast consumption)—				
38-40 high burning test	.04¾	.05¼	.04¾	.05
NEW YORK (Bayonne, N. J.)—				
41-43	.05¼	.05½	.05½	.05¾
GULF COAST (domestic)—				
41-43	.04⅜	.04½	.04¾	.04½

Petroleum Coke

(Prices per ton f.o.b. refineries in Chicago area)
(Refineries will absorb freight to 80 cents a ton)

	June 19		June 12	
Breeze (screenings)	5.00		5.00	
Pile run	5.00		5.00	
Direct from still	6.00		6.00	
Lump and egg	7.00	8.00	7.00	8.00

Furnace Oils and Tractor Fuels

(Zero cold test under 190° flash and good odor)

	June 19		June 12	
OKLAHOMA (Group 3)—				
32-36 straw	.02⅜	.02½	.02¾	.02½
36-38 straw	.02½	.02⅝	.02½	.02⅝
38-40 straw	.02½	.02¾	.02½	.02¾
39-41 prime white	.02⅝	.02⅞	.02⅝	.02⅞
NORTH TEXAS—				
38-40 straw	.02½	.02¾	.02½	.02¾
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
36-40 furnace oil	.02⅞	.03	.02⅞	.03
ARKANSAS (Ark., N. La. & Miss. del.)—				
32-36 furnace oil	.02⅝	.02¾	.02⅝	.02¾
CHICAGO (based on Oklahoma Group 3)—				
32-36 straw	.02½	.02¾	.02⅝	.02¾
38-40 straw	.02½	.02¾	.02⅝	.02¾
38-40 prime white	.02⅝	.02⅞	.02⅞	.03
NEW YORK (Bayonne, N. J.)—				
36-40 (No. 1 grade)	.05¼	.05½	.05¼	.05½
32-36 (No. 2 grade)	.04¾	.05	.04¾	.05
21 industrial (No. 4 grade)	.04½	.05	.04½	.05

Gas Oil, Diesel Oil and Fuel Oil

(Gas oil per gallon; Diesel and fuel oils per barrel)

	June 19		June 12	
OKLAHOMA (Group 3)—				
32-36 gas oil cracking stocks	.02¼	.02⅜	.02¼	.02⅜
U.G.I. gas oil	.02⅛	.02⅜	.02¼	.02⅝
32-36, zero to 15 gas oil	.02½	.02⅝	.02½	.02⅝
28-30, No. 3 burner oil	.95	1.00	.95	1.00
28-30, zero to 10 fuel oil	.90	.95	.90	.95
26-30, zero to 10 fuel oil	.85	.95	.85	.95
24-26 fuel oil	.75	.80	.77½	.80
20-22 fuel oil	.67½	.70	.67½	.70
Below 16 fuel oil	.62½	.65	.62½	.65
NORTH TEXAS—				
32-36 gas oil, industrial	.01⅞	.02	.02	
22-26 fuel oil	.67½	.70	.67½	.70
Below 20 fuel oil	.57½	.62½	.57½	.62½
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
32-36 gas oil, zero	.02⅝	.02¾	.02⅝	.02¾
14-16 fuel oil	.70	.75	.70	.75
ARKANSAS (Ark., N. La. & Miss. del.)—				
30-32 gas oil, zero	.02⅝	.02¾	.02⅝	.02¾
32-36 gas oil	.02½	.02⅝	.02½	.02⅝
14-16 fuel oil	.70	.75	.70	.75
CHICAGO (based on Oklahoma Group 3)—				
32-36 gas oil, industrial	.02⅛	.02¼	.02¼	.02⅜
28-30 zero to 10, fuel oil	.97½	1.02½	.97½	1.02½
26-28 zero to 10, fuel oil	.87½	.92½	.87½	.90
22-26 zero to 10, fuel oil	.77½	.82½	.77½	.80
18-22 zero to 10, fuel oil	.62½	.67½	.62½	.67½
Below 18 fuel oil	.57½	.60	.57½	.60

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel less in all these areas.

PENNSYLVANIA (inland refineries)—				
36-40	.04⅛	.04¼	.04⅛	.04¼
CALIFORNIA—				
30-34 gas oil per bbl.	1.05	1.15	1.00	1.10
27 plus Diesel	1.05	1.15	1.05	1.15
12-16 bunker (at tidewater)	.70	.80	.60	.75
10-16 (cargo lots)	.60	.70	.55	.65
12-17 (tank cars)	.55	.75	.55	.75
GULF COAST—				
28-30 gas oil	.03½	.03¾	.03½	.03¾
28-30 Diesel (bunkers)	1.80		1.80	
Bunker C (bulk cargoes)	.95	1.00	.95	1.00
Bunker C (bunkers)	1.05	1.10	1.05	1.10
NEW YORK (Bayonne, N. J.)—				
28 plus, gas oil	.04½	.05	.04½	.05
28-30 Diesel (lighterage 6½ cents per bbl.)	1.95		1.95	
28-30 Diesel (tank cars)	.04¾	.05	.04¾	.05
*Bunker C (to ocean-going ships in N. Y. harbor)	1.30		1.30	

*Lighterage charge 5 cents per barrel additional.

Neutral Oils

(Vis. at 100° F. except Pennsylvania, and color N.P.A.)

	June 19		June 12	
OKLAHOMA (Group 3)—				
Zero to 10 Cold Test:				
150-3	.10		.09½	
180-3	.14¼		.10¾	
180-4	.10¾		.10¼	
200-3	.11¾		.11¼	
200-4	.11¼		.10¾	
240-3	.13¾		.13¼	
240-4	.13¼		.12¾	
280-3	.14¾		.14¼	
280-4	.14		.13½	
300-3½	.15¼		.14¾	
400-4	.17¼		.16¾	
100-2 paraffin oil	.05¾		.06½	
15-30 Cold Test:				
200-3	.10¾		.10¼	
200-4	.10¼		.09¾	
240-3	.12¾		.12¼	
240-4	.12¼		.11¾	
280-3	.13¾		.13¼	
280-4	.13		.12½	
GULF COAST—				
Pale Oils:				
200-3	.07½		.07½	
300-3	.08	.08⅛	.08	.08¼
500-3½	.09	.09¼	.09	.09¼
750-3½	.09½	.09¾	.09½	.09¾
1,200-3½	.10	.10¼	.10	.10¼
2,000-4	.10¼	.10½	.10¼	.10½
Red Oils:				
200-5-6	.06½		.06½	
300-5-6	.07	.07¼	.07	.07¼
500-5-6	.08	.08¼	.08	.08¼
750	.08½	.08⅝	.08½	.08¾
1,200-5-6	.09	.09¼	.09	.09¼
CALIFORNIA—				
Pale Oils:				
100-2½-3	.23	.25	.23	.25
200-2½-3	.23	.25	.23	.25
300-3-3½	.23	.25	.23	.25
350-3-4	.23	.25	.23	.25
400-3-4	.23	.25	.23	.25
450-3-4	.23	.25	.23	.25
550-3-4	.23	.25	.23	.25
600-3-4	.23	.25	.23	.25
Red Oils:				
200-4-5	.23	.25	.23	.25
300-5-6	.23	.25	.23	.25
350-5-6	.23	.25	.23	.25
400-5-6	.23	.25	.23	.25
450-5-6	.23	.25	.23	.25
500-5-6	.23	.25	.23	.25
600-5-6½	.23	.25	.23	.25

700-6½ plus	.23	.25	.23	.25
750-6½ plus	.23	.25	.23	.25
900-6½ plus	.23	.25	.23	.25
PENNSYLVANIA—				
150 vis. at 70° F., 3 color; 400-405 flash:				
Zero pour test	.25	.25½	.25½	.26
10 pour test	.24	.24½	.24½	.25
15 pour test	.23½	.24	.24	.24½
25 pour test	.22½	.23	.23	.23½
180 vis. at 70° F., 3 color:				
25 pour test	.27	.27½	.27	.27½
200 vis. at 70° F., 3 color:				
Zero pour test	.32	.33½	.32	.33½
10 pour test	.30½	.32	.30½	.32
15 pour test	.30	.30½	.30	.30½
25 pour test	.29½	.30	.29½	.30

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	June 19		June 12	
Bright Stocks:				
190-200 D	.26¼		.27¼	
150-160 D, 0-10	.23½		.24½	
150-160 D, 10-25	.23		.24	
150-160 25-40	.22½		.23½	
150-160 E	.22½		.23½	
Steam refined:				
630 light green (treated)	.14½		.15½	
600 light green (untreated)	.07	.09	.07½	.09
600 dark green (untreated)	.05	.08	.05½	.08
PENNSYLVANIA—				
Steam refined:				
600	.17	.17½	.17½	.18
650	.19½	.21	.20	.21½
600 Pennsylvania flash	.20½	.21	.21	.21½
630 Pennsylvania flash	.25	.25½	.25½	.26
600 Warren E filtered	.21½	.22	.22	.22½
Bright Stocks (Pennsylvania grade, No. 8 color, 145-50 at 210; 540-550 flash):				
10 pour test	.28	.28½	.29	.29½
15 pour test	.27½	.28	.28½	.29
20 pour test	.27	.27½	.28	.28½
25 pour test	.26½	.27	.27½	.28

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	June 19		June 12	
124-126 white crude scale	.03¼	.03⅜	.03⅜	.03½
PENNSYLVANIA—				
122-124	.0360		.0360	
124-126	.0375		.0375	
NEW YORK HARBOR—				
Wax (a.m.p.) in bags fully refined:				
120-122	.0420	.0430	.0420	.0430
123-125	.0440	.0460	.0440	.0460
125-127	.0445	.0470	.0445	.0470
128-130	.0480	.0495	.0480	.0495
130-132	.05	.0510	.05	.0510
133-135	.0545	.0570	.0545	.0570
135-137	.0570	.0595	.0570	.0595
124-126 crude scale	.03½	.03¾	.03½	.03¾
Petrolatum in barrels in carload lots:				
Dark green	.01⅞		.01⅞	
Amber	.02⅞	.03	.02⅞	.03
Extra amber	.03⅛	.03¼	.03⅛	.03¼
Lily white	.06¾	.06⅞	.06¾	.06⅞
Snow white	.07¾	.07⅞	.07¾	.07⅞
Cream	.05⅝	.05¾	.05⅝	.05¾
CHICAGO (f.o.b. switching district)*—				
122-124 wax	.0490	.0500	.0490	.0500
125-127 wax	.0515	.0525	.0515	.0525
127-129 wax	.0530	.0540	.0530	.0540
130-132 wax	.0590	.0600	.0590	.0600
132-134 wax	.0615	.0625	.0615	.0625

*Cents per pound on carlot orders in burlap bags of 225 lbs. approx. Add 3° F. a.m.p.

Export Prices

GASOLINE

GULF COAST—	June 19		June 12	
U. S. Motor	.04¼	.04⅜	.04¼	.04⅜
60-62 400	.04⅜		.04⅜	
61-63 390	.04½	.04⅝	.04½	.04⅝
64-66 375	.04⅝	.04¾	.04⅝	.04¾
LOS ANGELES, CALIF.—				
U. S. Motor grades:				
53-55 octane	.04	.04¼	.04	.04¼
55-65 octane	.04¼	.04½	.04¼	.04½
65-67 octane	.04½	.04¾	.04½	.04¾
67-69 octane	.04¾	.05	.04¾	.05
Above 69 octane	.05	.05¼	.05	.05¼
58-60 400 endpoint	.04¾	.05½	.04¾	.05½

KEROSENE

GULF COAST—				
41-43 prime white	.04⅛	.04¼	.04⅛	.04¼
41-43 water white	.04¼	.04⅜	.04¼	.04⅜
44 water white	.04⅜	.04½	.04⅜	.04½
LOS ANGELES, CALIF.—				
41-43 water white	.04¼	.04¾	.04¼	.04¾

LUBRICANTS

NEW YORK (f.a.s. in bbls.)—				
Cylinder Stocks:				
600 Warren E	.27	.28	.28	.29
600 S.R. unfiltered	.25	.25½	.26	.26½
650 S.R. unfiltered	.27	.27½	.28	.28½
600 flash S.R.	.28	.28½	.29	.29½
630 flash S.R.	.32½	.33	.33½	.34
Bright Stocks:				
8 color	.34	.35	.35	.36
6½ plus color, in dilution	.32½	.33	.33½	.34

NEUTRAL OILS

200-3 color	.35	.36	.36	.37
150-3 color	.31		.32	.33

PARAFFIN WAX (Fully Refined)

NEW YORK (prices per pound)—				
120-122 a.m.p.	.0405	.04¼	.0405	.04¼
123-125 a.m.p.	.0430	.0455	.0430	.0455
125-127 a.m.p.	.0440	.0465	.0440	.0465
128-130 a.m.p.	.04¾	.0490	.04¾	.0490
130-132 a.m.p.	.0495	.0505	.0495	.0505
133-135 a.m.p.	.0540	.0565	.0540	.0565
135-137 a.m.p.	.0565	.0590	.0565	.0590

Crude Oil Gravity Table

Degrees gravity—	1 Oklahoma and Kansas	2 North Texas, Central Texas and East Central Texas	3 North Louisiana and Arkansas	4 Gray County, Texas	4 Carson, Hutchinson, and Moore Counties, Texas	6 Conroe, Texas	7 Salt Creek, Wyo.	8 Gulf Coast, Texas, and Louisiana	9 Gulf Coast, Texas, and Louisiana	10 Cotton Valley, Louisiana
Below 20	....	....	....	....	....	....	....	$.82	$.82	....
20-20.9	....	....	....	....	....	....	....	.84	.84	....
21-21.9	....	....	....	....	....	....	....	.86	.86	....
22-22.9	....	....	....	....	....	....	....	.88	.88	....
23-23.9	....	....	....	....	....	....	....	.90	.90	....
24-24.9	....	....	....	....	....	....	....	.92	.92	....
Below 25	*$.76	....	....	....	....	....	....	....	....	$.70
25-25.9	*.78	....	....	....	....	....	....	.94	.94	.72
26-26.9	*.80	....	....	....	....	....	....	.96	.96	.74
27-27.9	*.82	....	....	....	....	....	....	.98	.98	.76
28-28.9	*.84	....	....	....	....	....	....	1.00	1.00	.78
Below 29	.84	$.79	$.79	....	....	....	$.84	....	....	....
29-29.9	.86	.81	.81	....	....	....	.86	1.02	1.02	.80
30-30.9	.88	.83	.83	....	....	....	.88	1.04	1.04	.82
31-31.9	.90	.85	.85	....	....	....	.90	1.06	1.05	.84
32-32.9	.92	.87	.87	....	....	....	.92	1.08	1.06	.86
33-33.9	.94	.89	.89	....	....	....	.94	1.10	1.07	.88
34-34.9	.96	.91	.91	....	....	....	.96	1.12	1.08	.90
Below 35	....	....	....	$.79	$.69	....	....	....	....	....
35-35.9	.98	.93	.93	.81	.71	$1.09	.98	1.12	1.09	.92
36-36.9	1.00	.95	.95	.83	.73	1.11	1.00	1.12	1.10	.94
37-37.9	1.02	.97	.97	.85	.75	1.13	1.02	1.12	1.11	.96
38-38.9	1.04	.99	.99	.87	.77	1.15	1.04	1.12	1.12	.98
39-39.9	1.06	1.01	1.01	.89	.79	1.17	1.06	1.12	1.13	1.00
40 and over	1.08	1.03	1.03	.91	.81	1.19	1.08	1.12	1.14	1.02

Note.—Effective June 1, 1934, Texas Co. purchases Texas Panhandle crude on a sweet crude and sour crude basis. Panhandle sweet crude is paid for on a basis of the Gray County prices posted above, and Panhandle sour crude is paid for on a basis of Carson and Hutchinson County prices posted above.

*The following companies purchasing crude oil in Kansas or Oklahoma, or both, begin their price schedule: Below 25°, 76 cents; 25-25.9°, 78 cents, with 2 cents added for each degree upward to 40 and over at $1.08; Carter Oil Co., Magnolia Petroleum Co., Pure Oil Co., Rock Island Refining Co., Shell Petroleum Corp., Sinclair Prairie Oil Marketing Co., Skelly Oil Co., and Wilcox Oil & Gas Co. All others begin their schedules at below 29°, 84 cents, excepting Philtex Oil Co., which begins with below 31° at 85 cents.

Column 1.—Effective September 29, Texas Co. in Oklahoma; Stanolind Crude Oil Purchasing Co. in Kansas and Oklahoma; Anderson & Prichard, Inc., in Oklahoma; Bell Oil & Gas Co. in Oklahoma; Carter Oil Co. in Oklahoma and Kansas; Deep Rock Oil Co. in Oklahoma; Derby Oil Co. in Kansas; Globe Refining Co. in Oklahoma; Golden Rule Refining Co. in Kansas; Gypsy Oil Co. in Oklahoma and Kansas; Kanotex Refining Co. in Kansas; Magnolia Petroleum Co. in Oklahoma; Mid-Continent Petroleum Corp. in Oklahoma; National Refining Co. in Kansas and Oklahoma; Shell Petroleum Corp. in Kansas and Oklahoma; Sinclair Prairie Oil Marketing Co. in Kansas and Oklahoma; Texas Co. in Oklahoma; Tide Water Oil Co. in Oklahoma; Vickers Refining Co. in Kansas; Continental Oil Co. in Kansas and Oklahoma; Empire Pipe Line Co. in Oklahoma and Kansas; Philtex Oil Co. in Kansas and Oklahoma; Pure Oil Co. in Oklahoma; Skelly Oil Co. in Kansas. Effective September 29, by White Eagle Oil Corp. in Kansas; Oct. 1 by Barnsdall Refineries, Inc., in Oklahoma.

Column 2.—Effective September 29, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Bell Oil & Gas Co., Continental Oil Co. Effective September 29, in the Van Pool, Van Zandt County, Pure Oil Co. posted below 29°, 84 cents, with 2 cents added for each degree up to 40 and over at $1.08.

Column 3.—Effective September 29, by Texas Co., Magnolia Petroleum Co., Gulf Refining Co. Effective December 22, Stanolind Oil & Gas Co. in Pine Island, Louisiana, and Marion County, Texas, posted below 29°, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03. Effective March 17, 1934, by Standard Oil Co. of Louisiana and Louisiana Oil Refining Co. Starting with below 25°, 71 cents, adding 2 cents for each degree upward to 40 and over at $1.02.

Column 4.—Effective September 29, by Texas Co., Humble Oil & Refining Co., Magnolia Petroleum Co., Sinclair Prairie Oil Marketing Co., and H. F. Wilcox Oil & Gas Co. On same day Philtex Oil Co. posted below 31°, 71 cents, with 2 cents added for each degree up to 40 and over at 91 cents. Effective June 1, 1934, Texas Co. (see note above).

Column 5.—Effective September 29, by Texas Co., Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Wilcox Oil & Gas Co., Continental Oil Co. On same day, Philtex Oil Co posted below 21°, 61 cents, with 2 cents added for each degree upward to 40 and over at 81 cents. Effective June 1, 1934, Texas Co. (see note above).

Column 6.—Effective September 29, by Humble Oil & Refining Co. and Tide Water Oil Co., and on September 30, by Texas Co. which on September 29 had posted a schedule of $1.07 to $1.12 with a 1-cent spread on each degree.

Column 7.—Effective September 29, by Stanolind Oil & Gas Co.

Column 8.—Effective September 29, by Humble Oil & Refining Co., Gulf Pipe Line Co., Shell Petroleum Corp., Pure Oil Co., Sinclair Prairie Oil Marketing Co. On October 2, Magnolia Petroleum Co. posted Lockport, Louisiana: 20-20.9°, 84 cents with 2 cents added for each degree upward to 34 and over at $1.12, and in Cameron Meadows and Iowa, Louisiana: Below 20°, 72 cents with 2 cents added for each degree up to 34 and over at $1.02. These prices were 2 cents higher on each degree than Magnolia prices posted on September 29. Effective September 29, Shell Petroleum Corp. posted in Iowa, Louisiana, district: Below 20° 70 cents, with 2 cents added for each degree upward to 34° and over at $1; and in Black Bayou and White Castle, Louisiana: Below 20°, 80 cents, with 2 cents added for each degree upward to 34° and over at $1.10.

Column 9.—Effective September 30, Texas Co. (On September 29, Texas Co. had posted a schedule of 2 cents on each degree, but changed it on September 30.)

Column 10.—Effective September 29, by Louisiana Oil Refining Co.

(California Crude Oil Prices on Page 37)

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas	$1.00
Stratman, Kans. (Sept. 29, 1933)	1.08
Corsicana (heavy) (June 17, 1933)*	.30
Other fields	(See gravity table)

Note—In East Texas, effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Shell Petroleum Corp., Gulf Pipe Line Co., Tide Water Oil Co., Sinclair Prairie Oil Marketing Co., Magnolia Petroleum Co., Sun Oil Co., Panola Pipe Line Co., and Empire Oil & Refining Co.

*Magnolia Petroleum Co.

West Texas

Crane, Upton, Crockett, Howard Glasscock, Mitchell (Sept. 29, 1933)	$.70
Ector, Winkler and Pecos Counties and Lea County, New Mexico (Sept. 29, 1933)	.75
Pecos County, Yates shallow pool (Sept. 29, 1933)*	.65
Jones and Fisher Counties	See gravity table.

Note—Effective September 29, 1933, by Humble Oil & Refining Co., Texas Co., Gulf Pipe Line Co., Shell Petroleum Corp., Magnolia Petroleum Co., and by Stanolind Oil & Gas Co. in Winkler County, Texas.

*Shell Petroleum Corp.

Gulf Coast

Grade A and Grade B specifications discontinued by leading buyers	(See gravity table)
Tomball (see note)*	$1.15
Livingston (Sept. 29, 1933)†	1.00
Cleveland (Jan. 11, 1934)	1.00
Greta (Sept. 29, 1933)	.85
Refugio, light	(See gravity table)
Refugio, heavy (Sept. 29, 1933)‡	.85
Markham and High Island	(See Gulf Coast gravity table)
Conroe	(See Conroe gravity table)

Note—Tomball, effective September 29, by Humble Oil & Refining Co., and October 2, by Magnolia Petroleum Co., and November 10, by Stanolind Oil & Gas Co.

*Greta posted by Texas Co. †Shell Petroleum Corp. ‡Refugio heavy, by Humble Oil & Refining Co. Cleveland (Liberty County), posted by Magnolia Petroleum Co.

South Central and Southwest Texas

(See note below table)

Darst Creek	$.87
Mirando	.80
Luling (Sept. 29, 1933)	.75
Pettus	1.05
Salt Flat	.87
Lytton Springs (Sept. 29, 1933)	.95
Duval County (Sept. 29, 1933)	.80
Saxet	.85

Note—Effective on September 29 by Humble Oil & Refining Co., in Darst Creek, Mirando, Pettus, Salt Flat and Saxet. Effective September 29 in Darst Creek by Gulf Pipe Line Co. and Texas Co. Effective October 2 by Magnolia Petroleum Co. Effective in Pettus and Salt Flat on September 29 by Humble Oil & Refining Co. and Gulf Pipe Line Co. Luling and Lytton Springs by Magnolia Petroleum Co. Duval County by Texas Co. Saxet, effective September 29, by Humble Oil & Refining Co. and Texas Co.

(Continued on Page 37)

Late Fields

OKLAHOMA

Amerada Petroleum Corp.'s No. 1, C NE NE SW Section 35-13-5, in the Wilzetta Pool, Lincoln County, found Hunton lime at 4,241-87 feet and swabbed 25 bbls. in two hours. There was water in the last 5 feet of the formation.

Halliburton's No. 2, C NW NE NE Section 9-7-6, Seminole County, flowed 560 bbls. in 24 hours, following an acid treatment in Hunton lime at 3,656-3,715 feet.

Phillips Petroleum Co.'s No. 2, C SW NE Section 19-9-5, Pottawatomie County, swabbed 244 bbls. in 24 hours from Hunton lime at 4,125-59 feet, which had been acidized.

Winona Oil Co. and Jarvis & Holm's No. 1, C SE SE NE Section 31-7-8, south of the Fish Pool, flowed 2,381 bbls. of oil and 2,425 bbls. of water in a 24-hour test and in the next 24 hours made 1,787 bbls. of oil and 2,502 bbls. of water, producing from Wilcox sand at 4,212-16 feet (corrected).

KANSAS

Atlantic Oil Producing Co.'s No. 1, C SE NE Section 27-21-13w, Stafford County, Kansas, found Siliceous lime at 3,634-42 feet and the hole filled 3,000 feet with oil in 12 hours. It was swabbed to the bottom in three and one-half hours, but no gauge of the production was taken. It may be deepened.

Continental Oil Co. and Gypsy Oil Co.'s No. 1, C NE NE NW Section 32-21-1w, McPherson County, was acidized in Hunton lime at 3,274-98 feet and produced 90 bbls. in one hour and was then shut in. The following day it pumped and flowed 243 bbls. and was again shut in. On Sunday it produced at the rate of 30 bbls. per hour.

Empire Oil & Refining Co.'s No. 1, C NW NE NE Section 26-15s-14w, Russell County, produced 373 bbls. in 23 hours after an acid treatment in lime at 3,340-49 feet.

Empire Oil & Refining Co.'s No. 2, C NE SE SE Section 7-22-3w, Harvey County, produced 175 bbls. in 24 hours after an acid treatment of Hunton lime at 3,382-3,418 feet.

Eastern Refined Oil Markets Are Unsettled

(Continued from Page 25)

their slightly higher base prices and top clause provisions. Several of the larger refiners are quoting 5½ cents on the No. 1 grade and 5 cents for Nos. 2, 3 and 4. Spot sales are reported in which these prices have been shaded from one-fourth to one-half cent per gallon.

The demand for Diesel oil at prices ranging from 4½ to 5 cents has improved. Those in touch with this market say that the demand for Diesel fuels is gradually increasing due to widening use of Diesel engines as power units in land and marine service. The demand for bunker fuel oils also has improved with a greater marine consumption. The bunker fuel oil continues to be quoted at $1.30 per barrel in the New York Harbor area.

Sellers reported a better demand for crude scale wax over the week from domestic sources. There were no general changes in quotations in the crude scale and refined grades during the week with sellers predicting an improved demand for export and domestic movement in the next 30 to 60 days.

R. D. PARKER RESIGNS

AUSTIN, Tex., June 19.—R. D. Parker, oil and gas administrator for the State Railroad Commission in charge of East Texas, has resigned, effective immediately. His resignation is attributed to friction with the commission over the matter of employes. Capt. E. N. Stanley has been made supervisor in charge of East Texas.

Texas - Louisiana - New Mexico Drilling Contractors' Assn. Frames Program

By L. E. BREDBERG

FORT WORTH, Tex., June 16.—The Texas - Louisiana - New Mexico Drilling Contractors Association held a meeting here to consider four major problems: Violations of the code by producers and contractors entering into contracts for drilling at less than the economic cost of operation; violations of the code by contractors failing to observe the maximum hour and minimum wage provisions; violations of the code by producers in allowing such contractors to continue drilling on their properties; and the development of administrative procedure enabling Federal authorities to prosecute conscious violators.

The program worked out provides for the fixing of fair economic costs of drilling in every oil field in the territory by the middle of July. It also calls for a survey of the labor conditions in the fields to determine the attitude of the workers to the six-hour day. Reports of code violations are to be investigated and other factors and conditions in drilling contracting are to be studied.

A committee was chosen to meet with Quinn Shaughnessy of counsel for the Petroleum Administrative Board, to make special recommendations; W. D. McBee, secretary of the association; C. E. Lee, Houston, of the Shell Petroleum Corp., and D. N. Hendricks, of the Gulf Production Co.

The committee recommended immediate action by zone committees to classify Texas fields as to characteristics and conditions, grouping them if possible; mail questionnaires to be returned by July 5, and hearings to be held before July 15, the date set for fixing of a fair drilling cost.

Many of the contractors disapproved of a six-hour day for drilling crews, the crews in many instances electing to work eight hours instead of six-hour tours. One contractor said his men worked six hours for him then went over to another rig and put in another six-hour shift for another contractor. Another contractor said he was losing veteran men because he operated under the six-hour provision of the code instead of eight hours a day.

Another contractor said the hazards of drilling were lessened in dangerous areas by working eight-hour shifts. The six-hour shift, it was said, is not economical for the drilling crews, and a labor survey was proposed. Harvey C. Fremming, president of the International Association of Oil Field, Gas and Refinery Workers, accepted the proposal and said he would furnish a man for the various surveys to be made in each producing area in the state.

Mr. Fremming questioned the contractors as to the work periods, and urged that producers pay more to contractors, declaring wage cutting was a large contributing factor to the depression. He asked for better co-operation between the contractors and labor, and cited the recent agreement between his organization and the Sinclair companies.

The drilling contractors association recommended that violating contractors be "blacklisted" for 60 days.

Wage Scale in West Virginia

SPENCER, W. Va., June 16.—The regional committee on drilling practices for West Virginia, acting under authority of the oil code, at a regular meeting held in this city has petitioned the Planning and Coordination Committee and petroleum administrator to permit producers and contractors in West Virginia to pay wages to drillers and tool dressers in areas not exceeding 2,500 feet in depth the oil code wage minimum less 15 per cent and for areas not exceeding 1,000 feet in depth the oil code wage minimum less 25 per cent. The wages, therefore, to be paid drillers and tool dressers working in oil territory or drilling for oil will be, within the state of West Virginia, as follows and effective in accordance with provisions of the oil code:

Areas not exceeding 2,500 feet in depth: Drillers, 85 cents per hour; tool dressers, 74⅜ cents per hour.

Areas not exceeding 1,000 feet in depth: Drillers, 75 cents per hour; tool dressers, 65⅝ cents per hour.

Considerable misunderstanding has arisen in West Virginia as to wages to be paid drillers and tool dressers. The regional committee on drilling practices for West Virginia, oil code authority, has no jurisdiction in natural gas territory. No code has yet been approved by the authorities at Washington for the natural gas industry. Hence, no scale of wages has been set.

The committee will hold hearings relative to wages and other problems which may arise within the oil industry within the state at convenient times and places and upon complaint from individuals or groups representing producers, labor or drilling contractors. Information may be secured from or requests for hearings on complaints filed with C. A. Oakes, chairman, 600 Union Building, Charleston, W. Va., or Ben F. Heck, secretary, Spencer, W. Va.

Drilling Subcommittees

WASHINGTON, D. C., June 18.—The Planning and Coordination Committee announces the following appointments recently approved:

The Drilling Practices Subcommittee for Southwest Pennsylvania area, Region No. 1, with the following personnel: Producers, M. B. Layton, Washington; F. D. Freeland, Waynesburg; Raymond Orrill, Waynesburg. Drilling contractors, George K. Gray, Washington; J. A. Fox, Washington; Hilda McClure, Waynesburg.

The Drilling Practices Subcommittee, State of Indiana, Region No. 3, with the following personnel: Drilling contractors, R. J. Rendall, Princeton; F. W. Davis, Princeton; S. Nelson, Princeton. Producers, Kenneth C. Bell, Indiana Southwestern Gas Corp., Vincennes; Harry Kelly, Murphy Oil Co., Petersburg; Don F. Kerr, Siosi Oil Corp., Terre Haute.

The Drilling Practices Subcommittee, State of Michigan, Region No. 3, with the following personnel: Drilling contractors, J. W. McIntosh, Mount Pleasant; Charles Bell, Mount Pleasant; Robert W. Atha, Mount Pleasant; Harry Friesner, Alma; Emil C. Fielder; John Goll, Saginaw; William Cline, Mount Pleasant. Producers, Howard D. Atha, Mount Pleasant; G. H. Fink, Mellon-Pollock Oil Co., Pittsburgh, Pa.; J. C. Graves, Saginaw; W. A. Hower, Muskegon Oil Corp., Muskegon; C. L. Maguire, Roosevelt Oil Co., Mount Pleasant; E. F. Claggett, Pure Oil Co., Saginaw; George B. Talbot, Talbot Oil Co., Saginaw.

The Drilling Practices Subcommittee, State of Ohio, Region No. 3, with the following personnel: Drilling contractors, Morton Lupher, Lupher Drilling Co., Columbus; W. A. Locker, Kenrow Co., Wooster; L. K. Schmidt, Burton, Morgan & Stevens Co., Wooster; W. D. MacIntire, MacIntire & Guthrie Drilling Co., Newark; I. R. Blauser, Marietta; C. R. Temple, Temple-Kennedy Drilling Co., Upper Sandusky; Willard George, Findlay; W. C. Adair, W. C. Adair & Co., Logan. Producers, J. J. Schmidt, Ohio Producing & Refining Co., Cleveland; H. J. Lowe, Pure Oil Co., Newark; A. E. Faine, Ohio-Pennsylvania Crude Oil Association, New Straitsville; Harold M. McClure, Lima Pipe & Supply Co., Lima; Charles F. Huff, Preston Oil Co., Findlay; H. F. Moran, Ohio Oil Co., Findlay; W. L. Franks, Gordon Oil Co., Logan; O. C. Dunn, Jr., Smith & Dunn, Marietta.

The Oil Man's Calendar

June

17-22—Saranac, N. Y., Society of Automotive Engineers, Saranac Inn.

20-23—State College, Pa., A.S.M.E. National Oil and Gas Power meeting.

25-29—Denver, Colo., American Society of Mechanical Engineers, Cosmopolitan Hotel.

25-29—Atlantic City, N. J., American Society for Testing Materials, annual meeting.

28-29—Charleston, W. Va., West Virginia Oil Marketers Association.

July

9-10—Rapid City, S. Dak., South Dakota Independent Oil Men's Association.

August

24-27—Titusville, Pa., Drake Well Memorial Celebration.

September

Atlantic City, N. J., North American Gasoline Tax Conference.

9—Wernersville, Pa., American Trade Association executives.

10-14—Cleveland, Ohio, American Chemical Society.

11-12—Louisville, Ky., Kentucky Petroleum Marketers Association, Brown Hotel (dates tentative).

19-21—Atlantic City, N. J., National Petroleum Association.

26-27—Columbus, Ohio, Ohio Petroleum Marketers Association, Deshler-Wallick Hotel.

October

1-5—Cleveland, Ohio, National Safety Council, Cleveland, Statler, Carter and Hollenden Hotels.

9—Michigan Independent Petroleum Distributors Association, place to be named later.

12-13—American Institute of Mining Engineers, Petroleum Division, fall meeting, Tulsa, Mayo Hotel.

16-18—Big Four State Jobbers Association Convention, Kansas City, Mo.

29—American Gas Association Convention and Exhibition, Atlantic City, N. J.

November

5-9—Cleveland, Ohio, Automotive Service Industries Show, Cleveland Public Auditorium.

Los Angeles, Calif., American Association of Petroleum Geologists, Pacific section.

12-15—Dallas, Tex., annual meeting, A.P.I.

December

3-8—New York, National Exposition of Power and Mechanical Engineering, Grand Central Palace.

January

7—New York, Society of Automotive Engineers, annual dinner.

CUT BANK-SUNBURST LINE

DENVER, Colo., June 18.—International Pipe Line Co., subsidiary of the Texas Co., has let the contract to Rodger Moore, of Shelby, Mont., for the 28-mile pipe line from the Cut Bank Field to Sunburst. Pipe is now ready for stringing and ditching machine is ready to begin the trenching. It will have a capacity of 8,000 bbls. daily and completion is expected within 30 days.

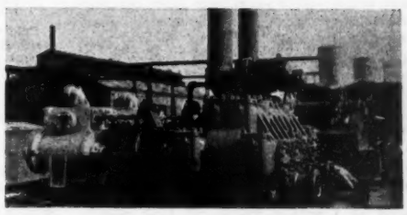
USED ROTARIES . . . Now Ready For Delivery!

Here are the three 125 h.p., 250-lb. W.P. Broderick Boilers with Rig. No. 2, at Oklahoma City.

We've sold a lot of used, reconditioned, and over-overhauled Rotaries—in a number of instances more than one, at different times, to the same operator. In every instance the buyer has been pleased with the quality of the equipment and the price paid for it. The Rotaries offered here are equal to some of the best values we have had heretofore and we guarantee the buyer will be pleased with his bargain on any one of them.

From this list a Rotary may be selected for any depth of work. They are all in first class condition ready to go on the job. Individual units, in some cases, may be exchanged for other units or switched from one Rig to the other. Some of the individual units may be purchased separately. We can, in fact, furnish exactly what you need for the work of most any territory. (Drill Pipe is not included with any of these Rotaries. We can always furnish new Drill Pipe and when it is available we can furnish used.)

Here is an opportunity to save thousands of dollars in equipment investment on a Rotary that will drill as rapidly and as cheaply as a rig costing more than double its cost—and in estimating the life of a Rotary, consider that only the minor items wear out rapidly on either a new or used outfit; the major, more expensive units are good for many years of hard work.



Here are the 14½x7½x18-in. Ideal Slush Pumps with Rig No. 1. Same size Ideal Pumps are with Rig No. 2 and Rig No. 4. Rig No. 3 has Johnson Pumps.

RIG NO. 1 AT WICHITA

This is one of the best Rotaries we have ever had to offer. It has just come out of our shops, thoroughly overhauled and ready for the job. Has (2) 125 h.p., 250-lb. first class Broderick Boilers; Ideal Draw Works; Gumbo Buster Engine; 14½x7½x18-in. Ideal Pumps and other similar standard rotary units. Priced for removal to any locality in the Mid-Continent. Ready for inspection Wichita yards.

RIG NO. 2 AT OKLAHOMA CITY

A complete Rotary consisting of all heavy equipment like that used to drill the deep Oklahoma City field. Suitable for any depth work, anywhere. Consists of (3) 125 h.p., 250-lb. W.P. Broderick Boilers; 12x12 Johnson Gumbo Buster Twin Rotary Drilling Engine; 14½x7½x18-in. Ideal Slush Pumps and other similar major units as well as practically all of the smaller equipment. Ready for inspection in Oklahoma City yards.

PRICES

These Rotaries are priced at from $12,500 to $25,000 (not including Drill Pipe) depending upon the size of the outfit and the type of equipment furnished.

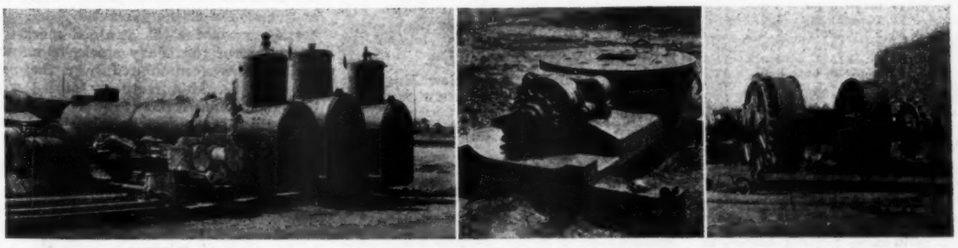
We will be glad to furnish interested parties an itemized list of the equipment with each rig, accurate descriptions of each unit, and price, f.o.b. present location or price delivered to your location.

RIG NO. 3 AT HOUSTON

This heavy duty, late type Rotary is complete with the exception of the boilers. We can however, supply boilers now with Rig. No. 4, if available at time of sale. Has 12x12 Johnson Twin Engine; 14½x7¼x18-in. Type G Johnson Slush Pumps; Union Tool Ball Bearing Rotary Table; 8-in. Johnson Draw Works with Automatic Cathead; and other heavy, late type units suitable for deep work. Contact Houston Store for complete information, price etc.

RIG NO. 4 AT HOUSTON

Here is a dandy complete rig. (3) 125 h.p., 300-lb. W.P. Kewanee boilers complete with Volcano Burners, and recently reflued. Lucey Timken Roller Bearing Crown Block; Union Tool Roller Bearing Traveling Block; Lucey 3-speed Roller Bearing Draw Works; 12x12 Oil Well enclosed Timken Roller Bearing Twin Drilling Engine; 14½x7½x18-in. Ideal Slush Pumps; 27½-in. Lucey Roller Bearing Table. If you think it economy to use the best equipment obtainable you should inspect this Rotary. It's at Houston and it's a bargain.



Here are photographs of a few of the units included with the various rigs, from which one may obtain an idea of the type of equipment furnished with these Rotaries.

RIG NO. 5 AT PAMPA

Here is one of the most reasonably priced Rotaries on hand. It is of the kind and type suitable for Panhandle and similar drilling with 125 h.p., 250-lb. W.P. Boilers 12x6¾x16-in. Johnson Gumbo Buster Pumps; 6-in. 3-speed Union Tool Draw Works and other similar units including many of the tools and extras that go with a rotary. At Pampa we have a number of extra units of various sizes and types, which may be substituted for the equipment listed with this Rotary. If you want to keep your investment in equipment low, it will pay to investigate this Rig.

These Rotaries are offered subject to prior sale and subject to any agreements made prior to the appearance of this advertisement. If interested in any one of them,

PHONE OR WIRE, AT OUR EXPENSE—COLLECT

For Prices, Terms and Full Details.

Any Telegraph Office will accept Collect Messages directed to any Bridgeport Store or Sales Office.

To Telephone: Simply ask Long-Distance for "Bridgeport, station to station, collect", at any of the following points:

Wichita, Kansas. Oklahoma City, Okla. Houston, Texas. Pampa, Texas.

Or any other Bridgeport Store.

A long established and zealously guarded reputation for supplying dependable equipment is your protection in buying from the

BRIDGEPORT

MACHINE COMPANY

MANUFACTURERS DISTRIBUTORS

OIL DRILLING-FISHING AND PRODUCTION EQUIPMENT

GENERAL OFFICE AND WORKS: WICHITA, KANSAS

BRANCH STORES: ACTIVE MID-CONTINENT AND GULF COAST FIELDS

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

June 19, 1934

Taxes

The gasoline quotations given in the following tables include the 1 cent Federal tax, as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third grade and a premium grade are also available.

Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank wagon, or 3 cents a gallon off retail prices, is permitted for purchases running between 5,000 and 10,000 gallons a month, and 2 cents a gallon off tank wagon, or 4 cents a gallon off retail prices, for purchases in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Denver, Colo.	18 0	20 0	6.0	10.0
Pueblo	18 0	20 0	6.0	13.0
Grand Junction	20.5	22.5	6 0	15 0
Casper, Wyo.	18.0	20 0	5.0	11.5
Cheyenne	18 0	20.0	5.0	13 0
Butte, Mont.	21 0	23.0	5.0	17 5
Billings	21.0	23.0	6 0	16.5
Helena	22.5	24 5	6.0	17.5
Great Falls	20.0	22.0	6 0	17.5
Salt Lake, Utah	21 0	23.0	5.0	16 0
Boise, Idaho	22.0	24.0	6 0	18.0
Twin Falls	22.0	24.0	6 0	18 0
Albu'que, N. M.	19.5	21.5	*7.0	13.0

*One-cent city tax.

Effective March 1, 1934, discount to dealers with or without contract throughout Continental territory: Undivided dealer discount off service station price, 4 cents; divided dealer accounts, 3½ cents.

Standard Oil Co. (Indiana)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Chicago	14.3	15.3	4 0	9.7
Decatur, Ill.	16 0	18 0	4.0	10.2
E. St. Louis	16 0	14.5	4.0	9.5
Joliet	14.3	16 2	4 0	10.2
Peoria	15.0	16.7	4.0	10.2
Quincy	16.6	14.5	4.0	10 0
Davenport, Ia.	16.6	18.6	4 0	10.1
Des Moines	16 6	18.6	4 0	10.1
Mason City	16 3	17.6	4 0	9.3
Sioux City	12.9	12.9	4.0	9 7
Duluth, Minn.	17 2	19.2	4.0	10.4
Mankato	16.8	16 8	4.0	10.3
Minneapolis	15 4	17.4	4.0	10.4
LaCrosse, Wis.	18 3	20 3	4.8	10 8
Green Bay	17.7	19.7	5.0	10 2
Milwaukee	17.1	19.1	5.0	9.7
Madison	17 4	19 4	5 0	9.9
Detroit, Mich.	17 0	19.0	4 0	10 5
Grand Rapids	16 7	18.7	4.0	10.2
Saginaw	17.0	19.0	4.0	10.5
Evansville, Ind.	17.7	19 7	5.0	10 0
Indianapolis	17.9	19 9	5.0	10.2
South Bend	18 2	20.2	5.0	10.5
Fargo, N. Dak.	17.9	19 9	4 0	12 1
Huron, S. Dak.	18.8	20.8	5.0	11 4
Sioux Falls	18.4	20.4	5.0	10 9
Kans. C., Mo.*	15 0	15 0	4 0	9.2
Springfield	15 1	17.1	3.5	9.1
St. Louis	15.0	17.0	3.5	8 7
St. Joseph*	15 3	15 0	4 0	8.8
Wichita, Kans.	14.6	16.6	4.0	10 2
Bartlesville, Ok.	16 0	18.5	5.0	10.5

*State tax 2 cents, 1-cent city tax and 1-cent Federal tax.

Discounts to dealers, effective March 1, 1934: Undivided accounts, 4 cents a gallon on Red Crown Ethyl and Standard Red Crown, divided accounts, 3½ cents a gallon on Red Crown Ethyl and Standard Red Crown.

Stanolex Furnace Oil in Chicago

Effective May 16, 1934, f.o.b. Chicago, tank wagon prices: No. 1 (36-40 lt. stw. zero), under 150 gallons, 8¼ cents; No. 2 (30-34 stw. zero), under 150 gallons, 7¾ cents; No. 3 (22-26 zero), under 150 gallons, 7⅛ cents; No. 4 (12-16 zero), under 400 gallons, 6 cents; viscosity of No. 4, 90-115 at 100° F.; No. 5, under 400 gallons, 5¾ cents. For deliveries above stated quantities deduct 1 cent.

Naphtha

	Tank wagon*
Oleum spirits	16 9
V.M.&P. naphtha	18 0
Cleaners' naphtha	18 0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent Federal tax.

Prices f.o.b. Chicago, September 13, 1933. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Atlanta, Ga.	20.0	22.0	7.0	14.5
Augusta	20.0	22 0	7.0	14.5
Macon	20 0	22 0	7 0	14.5
Savannah	20.0	22.0	7.0	14.0
Birm'ham, Ala.	21.5	23.5	8.0	12.0
Mobile	20 5	22 5	8.0	12.0
Montgomery	22 5	24.5	8.0	15.0
Jackson, Miss.	19 5	21.5	7.0	13 0
Vicksburg	16.5	18.5	7.0	14.0
Jack'ville, Fla.	20 0	22.0	8.0	11.5
Miami	20 0	22 0	8 0	13 5
Pensacola	18 0	20.0	8.0	13.5
Tampa	20.0	22.0	8.0	12.5
Lexington, Ky.	18 5	20 5	6 0	11 5
Covington	17 5	19.5	6.0	11.5
Louisville	18.0	20.0	6.0	11.5
Paducah	14.5	16.5	6.0	11.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia and Mississippi include 1 cent state tax; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline; in Florida an inspection fee of one-eighth cent on kerosene and gasoline. To Pensacola, Mobile and Birmingham state taxes on gasoline add 1 cent city tax.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Dallas, Tex.	17 0	19.0	5.0	6.0
Fort Worth	17 0	19.0	5.0	7 0
Houston	16 0	18.0	5.0	8.5
San Antonio	17.0	19 0	5 0	8.5
El Paso	18.0	20 0	5.0	11.0
Muskogee, Ok.	16 0	18.0	5.0	7.5
Okla. City	13.0	15.0	5.0	8 5
Tulsa	16 0	18.0	5.0	8.5
Ft. Smith, Ark.	16 0	18 0	5.0	8.0
Little Rock	17.5	19.5	7.5	9 0
Texarkana	17.0	19.0	5.0	7.0

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Atl'tic City, N.J.	19.0	18.5	4.0	10 0
Newark	18.3	17.8	4.0	9 5
Annapolis, Md.	19 6	19 1	5 0	10 0
Baltimore	19.1	18.6	5 0	9.5
Cumberland	20.6	20.1	5.0	12.7
Wash'g'n, D. C.	17 3	16 8	3 0	11 5
Danville, Va.	21 7	21.2	6 0	12.9
Norfolk	20.2	19.7	6.0	11.3
Petersburg	21.0	16.0	6.0	11.4
Richmond	20 6	15 6	6 0	11 7
Roanoke	21.8	15 4	6.0	12 9
Charls'n, W. Va.	20.0	19.5	5.0	12.6
Parkersburg	19.3	15 4	5 0	11.2
Wheeling	20 0	19 5	5.0	12.2
Charlotte, N. C.	23 4	22.0	7.0	13.5
Hickory	23.7	23.0	7 0	13 7
Mt. Airy	23 7	23.2	7.0	13 8
Raleigh	23 2	22.5	7.0	13 3
Salisbury	23.5	22.5	7.0	13.6
Charleston, S. C.	21.2	20.7	7 0	11.3
Columbia	23.0	22.0	7.0	13 2
Spartanburg	23.4	22.4	7.0	13.5

Price basis to dealers: Divided dealers at dealer price, which is 2½ cents above tank car; undivided dealers at regular price less one-half cent. Discount for kerosene, 1 cent off tank wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount is given.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Omaha	17.0	19.0	5.0	9.0
McCook	17 7	18.4	5.0	6.9
Norfolk	17 0	17.0	6.0	9.0
North Platte	17.8	18.0	5.0	9 0
Scottsbluff	18.5	19.3	5.0	9.0

Note—Discount to dealers, including any rentals under lease and agency agreements: Undivided accounts, Standard Red Crown and Red Crown Ethyl Gasoline 4 cents, Reliance (third brand) 3 cents, under service station price. Divided accounts, Standard Red Crown Ethyl Gasoline 3½ cents, Reliance (third brand) 2½ cents, under service station price. Discounts to consumers covered only by form CD-1, official commercial consumer contract.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
N. Orleans, La.	20 8	16.5	*7.0	†10.0
Baton Rouge	20 2	19 7	6 0	†12 0
Alexandria	21.1	20.6	*7.0	†10.0
Lafayette	21.3	20 8	*7.0	†12.0
Lake Charles	21 2	20 7	*7 0	†12 0
Shreveport	19 0	18.5	6.0	†12.0
Knoxville, Tenn.	24.7	23.2	8.0	13.0
Memphis	23.1	16 0	8 0	10 5
Chattanooga	24.5	24 0	8.0	12.0
Nashville	24.0	16 0	8.0	11.0
Bristol	24.5	21.7	8.0	14.0

*Includes city tax of 1 cent. †Louisiana kerosene prices include 1-cent state tax.

Price bases to dealers: Divided dealers at dealer price, which is 2½ cents above tank car; undivided dealers at dealer price less one-half cent.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA*

	Gasoline: Tank wagon†	Gasoline: Posted retail	Gasoline: Incl'ds tax	Kero. tank wagon
San Francisco	14.0	17.0	4.0	12 5
Los Angeles	12.0	15.0	4.0	12 5
Fresno, Calif.	14.5	17 5	4 0	14.0
Phoenix, Ariz.	18 5	21.5	6 0	‡16 0
Reno, Nev.	19 5	22.5	5.0	16.5
Portland, Ore.	19 0	22 0	6.0	13 5
Seattle, Wash.	19 0	22 0	6.0	13 5
Tacoma	19.0	22.0	6.0	13 5
Spokane	22.0	25.0	6.0	18.0

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Prices are at company's plant or depots, as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

‡Includes 5 cents state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Philadelphia, Pa.	15.5	17 5	4 0	10 0
Pittsburgh	16.0	18 0	4 0	10 0
Allentown	15.5	17.5	4.0	10.0
Erie	16.0	18.0	4.0	9 0
Scranton	16 0	18 0	4.0	10.0
Altoona	16 0	18.0	4 0	10.0
Dover, Del.	16.0	18 0	4.0	10.0
Wilmington	16.0	18.0	4.0	9 0
Springf'd, Mass.	15 5	17.5	4 0	8.75
Worcester	16 5	18 5	4.0	9 0
Hartford, Conn.	15.4	17.4	3.0	8 5
New Haven	15.2	17.2	3.0	8.5
Providence, R.I.	13.5	15.5	3.0	8.5

Note—Tank wagon prices are those applicable to consumers purchasing lots of 100 or more gallons in one delivery.

New York and Part of New England

STANDARD OIL CO. OF NEW YORK

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Albany, N. Y.	16 5	17.5	4 0	9.0
Met. New York	16.5	17.5	4 0	8.5
Buffalo	17.5	18.5	4.0	9 0
Rochester	17 5	18.5	4.0	9 25
Syracuse	17 0	18 0	4.0	9.25
Boston, Mass.	16.5	17.5	4 0	8.5
Portland, Me.	18.2	19.2	5 0	8 75
Manch't'r N. H.	19.2	20 2	5.0	9.0
Burlington, Vt.	19.8	20.8	5.0	9.75

Commercial consumers allowed 2 cents discount below service station prices in accordance with CD-1 of oil industry's code.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Ohio points	17.5	19.5	5.0	*13.5

*Includes state tax of 1 cent, effective July 22.

Canada*

IMPERIAL OIL, LTD.

Imperial 3-Star Gasoline

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Hamilton, Ont.	†21.5	24.5	6.0	17.5
Toronto, Ont.	†21.5	24 5	6.0	17 5
Brandon, Man.	30 3	33.3	7.0	21 8
Winnipeg, Man.	28 7	31.7	7.0	20.2
Regina, Sask.	29.0	32.0	6 0	21.5
Saskatoon, Sask.	31 8	34.8	6 0	24 2
Edmonton, Alta.	31 2	34 2	6.0	23 7
Calgary, Alta.	28.5	31.5	6.0	21 0
Vancouver, B.C.	†28.0	31.0	7.0	24.0
Montreal, Que.	24 0	27.0	6 0	17.0
St. John, N.B.	27.5	31 5	8 0	21.0
Halifax, N. S.	26.0	30.0	6.0	21.0

Imperial gallon used in Canada. †Governed by service station price.

Maritime provinces, all dealers 4 cents off service station price. All other provinces, open dealers 3 cents off service station price and 1 cent additional to 100 per cent accounts.

Retail Price Changes

Regular-Grade Gasoline and Kerosene

Standard Oil Co. (Indiana) reduced the gasoline tank wagon price 1.7 cent in Peoria, Ill., on June 7 and on June 13 reduced the gasoline station price 1 cent in Chicago to 15.3 cents.

Standard Oil Co. (Nebraska) reduced the kerosene price one-half cent in McCook to 6.9 cents on June 13.

Standard Oil Co. of New Jersey reduced the gasoline station price to 22 cents in Columbia, S. C., on June 9 instead of June 4 as first reported. On June 1 the gasoline station price was advanced .9 cent to 22.9 cents at Spartanburg, S. C., and on June 5 was reduced one-half cent to 22.4 cents. This also is a correction of an earlier report. On June 2 the gasoline station price was reduced .4 cent to 22.5 cents in Charlotte, N. C., and then on June 4 was reduced to 22 cents. On June 5 the gasoline station price was reduced 4.5 cents to 16 cents in Petersburg, W. Va. On June 6 the gasoline station price was reduced one-half cent to 22.5 cents in Salisbury, N. C.

Standard Oil Co. of Louisiana advanced the gasoline station price 2.7 cents in Bristol, Tenn.

Standard Oil Co. of New York reduced the gasoline tank wagon and station prices in Albany to 16½ and 17½ cents respectively on June 12.

Magnolia Petroleum Corp. reduced the gasoline tank wagon and station prices in Little Rock, Ark., to 17½ and 19½ cents respectively, on June 14.

Fear of Crude Price Cut Lowers Gasoline

(Continued from Page 24)

is little promise of an early recovery. The 26-70 material was traded in small quantities at 1⅜ to 1½ cents with buyers saying they held options on some material at 1¼ cents. At least one student of that market predicted that natural gasoline will go to 1 cent before the close of the week. This may or may not be realized, a major factor being the course of the refinery market.

One reason for the strained market is the effect of the heavy stocks of natural which were accumulated over the past two months. Manufacturers stored with the belief that refiners would be induced to buy a larger quantity of material than they had been normally taking. The appointment of a committee to work under the P. and C. committee in shaping the destinies of the gasoline industry under the code also acted to stimulate optimism.

Conflicting price movements were seen in the list of lubricants over the past week. On Thursday the major refiners posted a one-half cent advance in the list of neutral oils and then on Monday manufacturers of bright stocks posted a 1-cent drop in all grades of that product.

Wax remains plentiful and the price one-eighth cent under that of a week ago.

FILLING IRAQ LINE

The filling of the 1,350-mile pipe line of the Iraq Petroleum Co. in Iraq has started according to late reports from the fields. The northern leg of the line with Tripoli on the Mediterranean Sea as its terminal is being filled first. The filling operation will be carried on slowly due to the fact that all the pumps are not in operation and it will be necessary to make tests as the line is being filled. It is not expected that the line will be filled and ready to start regular deliveries until early fall.

NEWS FOR SALES DEPARTMENTS

Discount Contract to Be Used in Western States

Approval has been given by Administrator Ickes to the recommendation of Marketing Committee "D" asking for the adoption of the following resolution under Article 5, Rule 3, Paragraph 7:

Whereas, under date of February 20, 1934, the Hon. Harold L. Ickes, Secretary of the Interior and administrator of the code of fair competition for the petroleum industry, issued an order under Article 5, Rule 3, Paragraph 7, of the code approving a resolution of the Planning and Coordination Committee establishing conditions under which commercial consumers may secure gasoline and/or other motor fuel on contract quantity basis and on the same date approved Contract Forms CD-1 and CD-2 for use in making sales of gasoline and/or other motor fuel to commercial consumers; and

Whereas, said resolution in paragraph numbered 10 excluded from the operation of said order the states of California, Oregon, Washington, Arizona and Nevada and the territories of Hawaii and Alaska; and

Whereas, it has been recommended and appears to this committee that except for a change in the classification of gasoline and/or other motor fuel by octane ratings the said resolution approved February 20, 1934, should apply to the states of California, Oregon, Washington, Arizona and Nevada and the territories of Hawaii and Alaska;

Now, therefore, the said order of February 20, 1934, establishing conditions under which a commercial consumer may secure gasoline and/or other motor fuel on contract quantity basis is amended by striking out paragraph numbered 10, which reads as follows:

"10. Operations in the states of California, Oregon, Washington, Arizona and Nevada and in the territories of Hawaii and Alaska are excepted and excluded from the provisions hereof."

And said order, together with the order of the same date, approving Contract Forms CD-1 and CD-2 is hereby made applicable to the states of California, Oregon, Washington, Arizona and Nevada, and the territories of Hawaii and Alaska, with the following exceptions, which exceptions shall apply only to the states of California, Oregon, Washington, Arizona and Nevada, and the territories of Hawaii and Alaska:

(1) In paragraph numbered 5 of the order providing for discounts to commercial consumers, where the phrase "60 octane and above" appears, same shall be changed to read "65 octane and above" and where the phrase "below 60 octane" appears, same shall be changed to read "below 65 octane."

(2) In Contract Form CD-1 the octane ratings listed therein shall be changed accordingly.

BUY AMERICAN PLANT

WICHITA FALLS, Tex., June 16.—At meeting of a creditors' committee of American Refining properties held here, Kimbell-Bostic Pipe Co. of Burkburnett, Tex., for a cash consideration of $70,000 purchased the American Refining plant north of this city. The deal transferred to Kimbell-Bostic the plant and 118 acres with all the tankage, cracking plant and other material on the site. Original cost of plant was $800,000, not including a later addition of a $250,000 cracking unit.

It had been closed down since 1931. The new owners are undecided whether to operate or salvage.

Diesel Engines Have Natural Advantage Where Gasoline Is Not So Plentiful

While the market for high speed Diesel engines abroad is expanding at a rapid rate, the manufacture and sale of this type of engine is proceeding more slowly in this country. Engineers predict steady growth for the Diesel here, with this type of engine supplanting most other means of motive power eventually on buses, trucks, tractors, shovels and other types of industrial machinery. But abroad the high cost of gasoline has forced the rapid development of the Diesel, and manufacturers appear to be well ahead of makers in this country in the variety of equipment which they can offer to the consumer. Many European builders of motor trucks and buses have gone over entirely to Diesel engines.

In the opinion of some leading makers here, the present price of $45 to $55 per horsepower is too low with present volume to permit profits for United States manufacturers. Diesel engines formerly brought $70 to $75 per horsepower, and higher for marine types, and at those levels the possibilities for profit were more real. The present price, however, is well above the low point of the depression when they sold for about $20 per horsepower.

Several manufacturers in this country who formerly made commercial gas engines are now making small, high speed Diesel engines and have gone well beyond the experimental stage in development. In many cases these engines are being used on tractors and shovels, replacing the older steam shovels. But with gasoline in this country selling at a more reasonable price relatively than in Europe, there has not been the strong incentive to divert business to the Diesels. It was the high cost of gasoline abroad, one authority points out, that led to the popularity and development of small cars like the Austin, capable of getting 25 to 30 miles to the gallon. In buying Diesel engines it has been easy for the European to absorb the high first cost for he has been certain of a quick return through saving in fuel costs.

Another, although a less important deterrent to Diesel sales in this country, is the lack of a wide distributing market for Diesel fuels here. This has been a handicap in the pioneering stage where the prospective purchaser has had to consider all the factors, including a plentiful and easily accessible source of fuel supply. However, a better Diesel fuel distributing market presumably would follow the greater use of these engines.

Apparently, leading manufacturers of Diesel engines in this country cannot compete profitably with European manufacturers in the latter's markets. The biggest makers here have an incomplete line of equipment, compared with the Europeans, who make them in all sizes and types. Some manufacturers of portable compressors and drilling machinery have exported their equipment without engines, the latter business largely going to the European maker.

BURNER ASSOCIATION OBJECTS

At the request of R. M. Sherman, president of the American Oil Burner Association, a manufacturers' conference will be held on July 9 in Chicago, the day preceding the meeting of the board of directors of the association. At this manufacturers' conference, to which both members and nonmembers of the association are invited, a report will be made to the industry on the current status of the code program and a full opportunity will be given to discuss any and all problems affecting the industry. These meetings will be held in the Medina Michigan Avenue Club at 2 o'clock.

In discussing the present fuel oil situation, the executive committee endorsed a protest of the A.O.B.A. to the marketing committee of the Planning and Coordination Committee for the petroleum industry with reference to top price contract provisions and recommended that additional protests be filed on the basis of unwarranted increase in the base price of fuel oil. It was also recommended that protest be made against the present tariff on imported oil.

The current policies and program of the A.O.B.A. were discussed at a meeting June 11, but no action was taken pending further discussion at an adjourned meeting to be held Wednesday, June 27, in New York.

DIXIE SERVICE MEETING

Dixie Service Co., which operates stations in the East Texas district, and is a subsidiary of the East Texas Oil Refining Co., held a meeting at the Hotel Gregg in Longview on June 13, which was attended by 150 managers and company employes. Freeman W. Burford, Dallas, president of the company, acted as toastmaster.

NEW BLUE EAGLES

DALLAS, Tex., June 16.—Announcement was made by Fred M. Lege, Jr., Texas state chairman for marketing of the petroleum industry code, that new blue eagles have been received by him and will be issued on application addressed to him in Dallas. Unlike former methods of distributing these emblems, they would be handled through the Planning and Coordination Committee. All applications addressed other than to the state chairman will be eventually sent to his office.

A separate application must be sent for each emblem desired and only one emblem will be issued for each card received.

It is desired that the emblems shall be distributed to everyone at as near the same time as possible. An intensive publicity and advertising campaign is to be waged to acquaint the public with the fact that the new blue eagle means something—that the person displaying it is operating in compliance with the petroleum code. This is to be assured through the new method of distribution employing the zone and subzone committees of the Planning and Coordination Committee for this purpose.

The Planning and Coordination Committee is to have the assistance of a large force of investigators from the Department of the Interior to assist in determining that blue eagles get in the proper hands.

PURE ADDS STATIONS

ASHEVILLE, N. C., June 16.—The Consumers Oil Co., distributors of Pure Oil products in this section, announces the opening of three new superservice stations in Asheville. Construction of the new units will involve an expenditure of $85,000, it was stated.

In Canada Fuel Oil Not as Plentiful as Gasoline

CHATHAM, Ontario, June 16.—In contrast with conditions a few years ago, when there was a scarcity of gasoline and an excess of fuel oil in Canada, the present situation indicates a possibility of a gasoline surplus and a fuel oil shortage.

When in the early twenties the extensive demand for and refining of gasoline resulted in an excess of fuel oil, the refining industry in Canada in line with United States refiners turned its attention to the development of cracking equipment which would increase the output of gasoline from a given crude while decreasing the fuel oil by-product. At the same time attention was turned to crudes that helped to swell the gasoline volume, while systematic efforts were made to develop a larger market for fuel oil with railroad and steamship systems, in industrial plants and for domestic purposes.

The situation has been somewhat affected by the lessened demand for gasoline in recent years owing to the depression which resulted in some curtailment of pleasure driving. At the present time it is understood that fuel oil consumption for industrial, transportation and other purposes in Canada exceeds gasoline consumption, and that in Saskatchewan and some parts of Ontario it has been difficult to meet the fuel oil demand. This situation has been accentuated in Ontario by reason of greater demands on heavy crude oil for asphaltum, as a result of enlarged highway and pavement programs in the province.

The Montreal East refinery of Imperial Oil, Ltd., has been importing large quantities of heavy crude from Venezuela so that it is able to meet all demands from Quebec and supplement the supply available for Ontario.

The situation has a curious parallel in the early days of the Canadian refining industry when kerosene was the chief output of the plants owing to the demand for illuminating purposes, and gasoline was in little demand and quite often had to be run off as a waste product. With the development of the automobile gasoline came into its own, while the almost universal use of electricity for lighting has decreased the demand for kerosene.

The present situation is expected to somewhat affect the relative demand for light and heavy crudes though the refiners will undoubtedly adapt themselves very quickly to the new situation. Consumption of fuel oil for heating and other purposes in Canada in recent years has increased rapidly, in line with gains in the same commodity in the United States.

STATE LOSES CASE

LOUISVILLE, Ky., June 16.—The Mississippi Supreme Court has dismissed antitrust charges brought by the State against the Standard Oil Co. of Kentucky. The State maintained that the oil company sold gasoline in DeSoto County at lower prices than it charged for the same commodity in other counties for the purpose of destroying competition. The high court held that evidence produced by the State was insufficient to support the charges.

PURE OIL PICNIC

The Fort Worth office personnel of the Pure Oil Co. held its second annual picnic at Swift Packing Co.'s camp on Lake Worth on June 14. L. H. Murray, office manager of the company at Fort Worth, was in charge.

NEWS FOR PETROLEUM REFINERS

Barnsdall Units Will Be Merged Into One Company

Barnsdall Refineries, Inc., Barnsdall Oil Co. of California and all other companies in the Barnsdall group will be merged into one unit on June 30, to be known as the Barnsdall Oil Co. Except for some reallocation of certain work, there will be no change in the management. E. B. Reeser will head the new company as president and general officers of the company will include R. A. Broomfield as executive vice president; James A. Dunn, vice president and secretary; L. D. Messner, treasurer and assistant secretary; D. L. Frawley, vice president, and Frank Braman assistant secretary and assistant treasurer.

In the legal, tax and claim department William Dewey Loucks has been named general counsel; M. D. Kirk, general attorney Mid-Continent divisions; E. H. Balch, manager tax and claim departments; E. J. Vaughn, general attorney California division, and T. J. Casey, attorney.

In the refinery operating department F. E. Holsten has been named vice president and general manager; George D. Locke, vice president; J. F. Adams, vice president and sales manager; C. E. Votrian, assistant treasurer and assistant secretary; J. C. Evans, assistant sales manager; R. E. Stewart, traffic manager; O. E. McClatchey, purchasing agent, and Arthur Odell, head of group insurance and personnel.

The marketing division of the company will be headed by George D. Locke with J. F. Adams as sales manager. L. A. Potter, Henry Wormhoudt and R. W. Crawford will be regional managers. In the various marketing divisions of the new company Jeff Boucher will be manager of the Oklahoma-Arkansas division, E. D. Eitelman manager of the Missouri-Kansas division, D. D. Reinfrank in Minnesota, W. T. Hansen in Wisconsin, H. LeGros in South Dakota, Henry Wormhoudt in the Iowa-Nebraska division, T. C. James in the Toledo division, H. A. Jackson in Illinois and H. A. Schroeder in Indiana.

The production activities of the company will be headed by R. A. Broomfield in California and in the Mid-Continent by W. K. Whiteford. Other officers in the California division of production include W. C. Whaley, vice president and general superintendent; E. M. Skeehan, vice president and assistant secretary; E. C. Reed, assistant secretary and assistant treasurer; R. A. Broomfield, Jr., vice president and superintendent of land department; C. E. Good, purchasing agent, and R. W. Sherman, chief geologist.

Other officers of the Mid-Continent production division are D. R. Snow, vice president and manager geological and land departments; George J. Deeley, assistant secretary and assistant treasurer; George A. Schwab, superintendent land department; Joseph M. Green, attorney land department; and A. J. Schlosser, superintendent gasoline department.

RICHFIELD FIRE

JAMESTOWN, N. Y., June 18.—Several small tanks partially filled with gasoline caught fire at the local bulk plant of the Richfield Oil Co. and flames killed five persons. It started from what appeared to a small oil fire under an oil truck. This attracted many people and in a few minutes the flames spread to the tanks and one of them exploded to throw flames a great distance. Many others were injured.

DISMANTLE PLANT

Officials of the Producers Oil Co. announce dismantling of their Bristow, Okla., refinery, closed since April 1, will start within the next 10 days. The equipment will be reconditioned and sold.

Built by he Roland Oil Co. 15 years ago, this refinery has changed hands several times, being acquired by the Producers company in 1927.

CANADIAN PETROLEUM IMPORTS

OTTAWA, Canada, June 16.—Official figures of the federal department of trade and commerce show that in April Canada imported petroleum, asphalt and their products to a value of $1,681,357, as against a valuation of $2,990,150 in March. Of the April imports, the major percentages were: United States, 92.3; Peru, 5.9; India, 1.2.

Imports of crude petroleum into Canada in April totaled 38,983,458 gallons made up of 35,904,749 gallons from the United States and 3,078,709 gallons from Peru. In March the crude petroleum imports were much larger, including: United States, 51,026,031 gallons; Peru, 14,506,869 gallons; Colombia, 7,910,873 gallons.

Exports of crude petroleum and its products from Canada in April were valued at $51,852, against $146,308 in March.

ASHTON HEADS LABOR GROUP

Appointment of H. T. Ashton, of St. Louis, Mo., president of the Lubrite Refining Corp., as chairman of the newly created labor subcommittee for Region 3, petroleum code administration, was announced today by E. J. Bullock, general chairman of the regional code organization. Mr. Ashton's nomination has been approved by Harold L. Ickes, Secretary of the Interior and petroleum code administrator.

Other members of the committee are to be appointed within a few days. Labor problems of oil companies operating in the Middle West will be dealt with by the committee.

Mr. Ashton, the new chairman, has taken a prominent part in the oil industry's work on labor problems. He is chairman of the oil companies' committee which successfully handled a strike of service station men in St. Louis last week and has had extensive experience otherwise in active dealing with labor questions in all branches of the industry.

NEED GASOLINE TRACTORS

A $500 tractor is a national need, according to Earl Bartholomew of the engineering laboratory of the Ethyl Gasoline Corp.

"There is a growing demand for tractors which bear the same relation to the tractor industry that the $500 car does to the automobile industry," Mr. Bartholomew says in a survey reported to the Society of Automotive Engineers.

"Such machines are likely to be used only a small portion of the total time in a year in such work as plowing, cultivation, residence basement excavation, etc., but would serve a very definite function while in use and not consume food while not in use.

"They would have to be light, cheap, dependable, and easily serviced. If advantage is taken of all that has been learned in the development of the high-compression automobile engine, and in addition, a careful study is made of the requirements to be met in the field, it is believed that the high-compression Otto-cycle engine burning good gasoline will, in the final accounting, show the lowest cost per unit of service performed by such equipment."

Retracts Statement Against Standard of New Jersey

WASHINGTON, D. C., June 16.—A statement issued last week by L. H. Scott, chairman of the District of Columbia petroleum committee has been retracted here today in so far as it pertained to the Standard Oil Co. of New Jersey "being guilty of repeated and flagrant violations of the code as regards the giving of discounts and the labor provisions."

"The facts are that the Standard Oil Co. of New Jersey should never have been accused of such specific violations of the code," Mr. Scott said. "The records of our committee show there have been no charges against the Standard Oil Co. of New Jersey of violating any of the labor provisions of the code, and the name of the Standard Oil Co. of New Jersey should not have been linked with any such charges.

"I hope that this retraction, in justice to the Standard Oil Co. of New Jersey, will receive as widespread publicity as did the original statement, which statement was intended merely to set forth the basis on which the Blue Eagle would be awarded to any dealer or marketer of petroleum in the district of Columbia only."

EXEMPT SALES IN WASHINGTON

Approval has been granted to a revision of Article 5, Rule 3, Paragraph 7, relating to conditions under which consumers may secure range oil, Diesel fuel, and fuel oils, as follows:

"(c) That no guarantee of a fixed or top price over a period be made except as heretofore provided and also except:

"1. In the metropolitan area of Washington, D. C., in order to meet the severe competition of other fuels, range oils, Diesel fuel and domestic fuel oils (Nos. 1, 2, 3, and 4 as defined by commercial standards in effect at the time contract is made) may be sold with a top price not lower than 1 cent more than the posted price without discount on the date contract is made.

"2. In the metropolitan area of Washington, D. C., industrial fuel oils (Nos. 5 and 6 as defined by commercial standards in effect at the time contract is made) may be sold with a top price not lower than 20 per cent more than the posted price without discount on the date contract is made."

CANADIAN SALES DOWN

OTTAWA, Canada, June 16.—Official figures compiled by the federal department of trade and commerce from the gasoline tax returns of the various provincial governments show that gasoline sales in Canada in March were slightly down in comparison with the same month last year, though showing a seasonal increase over February.

The March total of 26,157,000 gallons compared with 22,197,000 gallons in February and 26,192,000 gallons in March, 1933.

It is noteworthy that while the eastern provinces uniformly show declines in gasoline sales, three out of the four western provinces show increases.

For the first three months of each year the comparative figures are as follows:

	1934	1933
Prince Edward Island	90,000	161,000
Nova Scotia	1,898,000	2,288,000
New Brunswick	692,000	1,184,000
Quebec	11,093,000	12,086,000
Ontario	39,331,000	41,849,000
Manitoba	3,051,000	2,693,000
Saskatchewan	2,836,000	2,825,000
Alberta	5,747,000	5,937,000
British Columbia	7,914,000	6,831,000

NEW ARUBA REFINERY

Foster Wheeler is credited with having secured a contract from the Standard Oil Co. of New Jersey to erect a complete refinery on the Island of Aruba at a cost in excess of $1,000,000. Details of the plant are lacking but construction is expected to be delayed until later in the year.

Recommend Two Codes to Determine Recovery

Tentative adoption of two national codes for testing natural gas for gasoline content has been recommended by Subcommittee 2-E of the American Petroleum Institute's committee on measuring, sampling and testing natural gas and natural gasoline. The recommendations call for general use of Testing Code No. 101 of the American Gas Association and Natural Gasoline Association of America, and the use where more applicable of Bulletin TS-281 of the California Natural Gasoline Association.

Further recommendations call for postponement of adopting any one particular schedule for use throughout the country pending determination by state universities of Oklahoma and California, through a series of tests, as to which is the more accurate and practical.

L. G. Rheinberger, of the Sinclair Prairie Oil Co., Tulsa, Okla., is chairman of the subcommittee.

GLOBE LOSES TANK

M'PHERSON, Kans., June 18.—An explosion in a 55,000-bbl. storage tank at the Globe Oil refinery here early today was followed by a fire.

The 20,000 bbls. of fuel oil in the tank were still burning Tuesday and Globe officials believed the fire would have to burn itself out with a loss estimated at $25,000.

NEW BRUNSWICK PRICES

ST. JOHN, New Brunswick, June 18. Announcement has been made of a reduction of 1½ cents a gallon in retail gasoline prices throughout New Brunswick. The new prices are: St. John and suburbs, 30 cents a gallon; elsewhere in New Brunswick, 31½ cents. A similar reduction was made in Nova Scotia recently after the inauguration of a provincial gasoline control measure. The prices are higher than in Ontario and Quebec owing to the greater cost of distribution where the number of cars per station is low.

MARINE WAGES SAME AS 1930

NEW YORK, June 16.—An agreement was reached here, effective today, in which approximately 30,000 men employed in the marine department of five oil companies will receive the same wage scales that were effective in 1930. This represents an increase of approximately 10 per cent in wages.

Negotiations in regard to the wage scale have been pending for several months with the United Licensed Officers Association and the Seafarers Council representing the employes. The companies affected by the agreement include Standard Oil Co. of New Jersey, The Texas Co., Gulf Oil Corp. and the Tide Water Oil Co. The Standard Shipping Co. and other subsidiaries of the Standard of New Jersey will come under the new agreement. The wage agreement applies only to those employed on floating equipment, totaling approximately 1,000 vessels.

George W. Snedden, Oil Man and Banker, Succumbs to Illness

George W. Snedden of Tulsa, age 48 years, oil executive and bank director and a pioneer operator in the Oklahoma Field, died at his home Monday, June 18. He had been in ill health for about two years.

Mr. Snedden was vice president and general manager of the British American Oil Producing Co. and of the Toronto

GEORGE W. SNEDDEN

Pipe Line Co.; president of Jackson. Wise & Snedden, Inc., drilling contractors and oil producers; president of the Arrow Drilling Co., president of the Producers Oil Corp. and president of the Western Oil Corp. He was one of the oldest directors, in point of service, of the First National Bank & Trust Co. of Tulsa.

Born in the little coal mining town of Antrim, Pa., Mr. Snedden later lived and attended school in Phillipsburg, Pa., another coal center. At the age of 16 he left home and went to Colorado. He was 20 years old when he came to Oklahoma in 1906, entering the employ of the Laurel Oil & Gas Co. in the Glen Pool, and residing at Sapulpa. Later he worked for the Sapulpa Refining Co., rounding out a practical experience in producing, refining and transporting oil.

Entering a larger field while still a young man, Mr. Snedden associated himself in an official capacity with the Western Oil Corp. and the Lorraine Petroleum Co., which latter company merged with the Interocean Oil Co., which in turn became a part of the British American Oil Producing Co.

Mr. Snedden moved to Tulsa in 1917 and thereafter took an active part in the development of the Mid-Continent Field and in the councils of oil men.

Mrs. Snedden and two sons and one daughter survive, together with three brothers and five sisters.

TEXAS PRORATION HEARING

AUSTIN, Tex., June 18.—The Texas Railroad Commission will consider proration at a hearing here June 26. Laten Stanberry, director of the oil and gas division, said the commission's need for evidence concerning new producing areas was the main purpose of the hearing. The commission needs evidence on new fields in Cherokee, San Patricio, Bee and Jackson Counties, and new deep pay sands in Webb, Refugio, Austin and Brazoria Counties, Mr. Stanberry said.

Current allowables, which permit daily production of approximately 1,065,000 bbls., were unchanged after the commission's last hearing, May 28. The daily market demand for Texas crude during June was estimated at 1,032,000 bbls. by Secretary Ickes, Federal oil administrator.

Another Pipe Record Is Made on the Gulf Coast

HOUSTON, Tex., June 18.—Pure Oil Co. has just completed a record casing job for the Gulf Coast in the successful setting and cementing of 7,410 feet of 10¾-inch O.D. pipe in its No. 12 Yount Lee at Sweet Lake, Cameron Parish, Louisiana. The well is in 7 feet of water in the middle of Sweet Lake, a large inland body of water in the marshes along the coast of that parish, which made the accomplishment all the more of interest as the work had to be handled from barges. Total depth of the hole is 7,439 feet and at latest report the plug had not been drilled. The pipe was run for protection as the hole possibly will be carried to a record depth for the coast.

During the setting of the casing the rig handled a maximum load of 420,000 pounds. The lower 3,000 feet of pipe was National Grade D semiflush, 51.30-pound, pipe with tool steel 10.91-inch O.D. couplings. The remainder was National Grade D regular long thread casing of the same weight with 11.65-inch couplings leveled down.

The casing was run in on two Baker float collars and guide shoes and handled by a National automatic elevator and spider. Eleven lines were used. Running of the casing required only 21 hours and no trouble was experienced either in the setting or cementing. The hole is 12⅜ inches in diameter.

Circulation was broken at 950 pounds pressure, and 380 sacks were used in the cementing, which was done under 1,600 pounds pressure in 1 hour and 10 minutes by Halliburton Oil Well Cementing Co. As is necessary at Sweet Lake, the cementing truck was taken to the rig and operated on a barge. Because of the temperatures, 7,000 pounds of ice were required to cool the cementing water down to 44 to 46 degrees.

Other casing in the well consists of 4,497 feet of 13⅜-inch casing, which was a record string in itself at the time of running; 1,061 feet of 18⅝-inch pipe; and the first surface string of about 90 feet of 24-inch pipe. It is customary at Sweet Lake to run large strings of surface pipe in anticipation of very deep drilling, all production being in low horizons.

Method Devised to Repair Pipe Line Collar Leaks

(Continued from Page 18)

ated when the brushes contact the metal of the pipe. The coating applied to the pipe is an insulator and if the pipe is properly covered there can be no short.

The battery and coil are carried in a small wooden box, mounted on four wooden wheels riding the top of the pipe as shown in the accompanying picture. The brushes, consisting of two overlapping, half circle sections of hair wire feelers, which tit around the pipe, are on an axle protruding from the rear and are dragged along the pipe. The brush holders can be raised or lowered around the pipe at will. The length of the spark is such that the feelers do not have to come into actual contact with the metal of the pipe to create the spark. The ground for the coil is provided through a long cable, the end of which sticks in the ground.

The device can be rolled along the pipe and operated by one man although it is more easily handled by two men, one on each side to watch for the holidays. The machine has been only roughly constructed but has proved very effective in locating bad places, which are marked with chalk as the men push the machine and then are recoated by the follow-up crew.

DEATH OF E. L. JILLSON

Edward L. Jillson, president of the National Investors Oil Co., died in Tulsa on Monday, June 18, after a long illness. Deceased had resided in Tulsa for the past eight years, moving from Okmulgee from which city his company had operated in the Oklahoma fields.

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NATURAL GASOLINE MANUFACTURE

Arguments Presented to Dismiss Panhandle Case

AUSTIN, Tex., June 16.—Wastage of more than 600,000,000 feet of natural gas daily in the Panhandle was claimed before Judge Kennerley of the U. S. District Court by attorneys arguing points in six suits brought to prevent the wastage. This was said by Attorney S. A. L. Morgan of Amarillo, representing the plaintiffs, to be more than is used daily by all domestic customers in the United States.

The cases involve injunction proceedings brought against owners of gasoline plants and gas producers who are said to be draining gas from surrounding territory. Their stripping operations, by which they extract gasoline from gas and blow the residue into the air, are permitted by a recent act of the legislature. The plaintiffs allege that this act and the orders of the Railroad Commission under it violate the conservation clause of the state constitution.

Defendants in the cases asked that they be dismissed on the ground that the act is constitutional and that the plaintiffs have no legal case.

The cases are those of J. T. Sneed vs. Phillips Petroleum Co., E. C. Britain vs. Shamrock Oil & Gas Co., Henry Shafer, Inc., vs. L. R. Hagy, Frank Carmichael vs. Smith Brothers Refining Co., Texas Christian University of Fort Worth vs. Continental Oil Co., and J. M. Huber Petroleum Co.

Attorneys Don Emery and Joe Dooley of Amarillo represented the defendants.

START CLYMORE PLANT

CORPUS CHRISTI, Tex., June 18.—Preliminary runs have been made on the equipment installed in the Nueces Refining Co.'s natural gasoline plant southwest of Agua Dulce on the Ollie Purl tract and production is averaging 18,000 gallons per day. Approximately 45,000,000 feet of gas are processed through the plant.

Plans and part of the equipment for a carbon black plant are on the grounds and construction is progressing. The carbon black plant will take that residue gas which is in excess of the plant needs, local field and household needs.

Garland Clymore, president of the company, also heads the Clymore Gasoline Co., which operates a 30,000-gallon plant in the Conroe Field of Texas, also on the Gulf Coast.

Complete Recovery of Light Vapors and Stabilization of Product in One Unit

The plant illustrated by the accompanying flow diagram may be considered a modern absorption plant in every detail, although many deviations from this general design exist in other modern gasoline recovery plants.

This type of plant differs from its predecessors in three important features. It has the ability to completely recover desired hydrocarbons from the gas, or vapors, with the minimum oil circulation. The gasoline is accurately separated from the absorption oil. The product may be stabilized to any desired vapor pressure without loss of hydrocarbons heavier than butane.

The efficient recovery is obtained by the use of a comparatively light absorption oil (low molecular weight) and the employment of sufficient number of absorption trays. The modern absorber seldom uses less than 16 trays. The number of trays required depends, however, on the process requirement, and ranges between 16 and 22. The use of a low molecular weight absorption oil makes it possible to circulate less oil for efficient recovery under the same absorption conditions of pressures and temperatures.

In the previous plants discussed in this series, some form of "knock-out," or water dephlegmator, was used for minimizing the carry-over of absorption oil with the gasoline vapors from the still. These various dephlegmators all had the common fault of only a single contact for attaining equilibrium between the vapors and condensate returned to the still. The complete elimination of oil from the gasoline vapors, therefore, was impossible. The still illustrated uses bubble plates throughout and the functions of stripping and dephlegmation are carried out in this one tower, which is a complete fractionating column, the feed being admitted at a point near the middle. Heat is applied in a preheater, and/or reboiler, and process or stripping steam is admitted at the bottom. The reflux which is admitted at the top of the column is a stream of gasoline and serves not only to cool the top of the column as in the case of water dephlegmators, but to supply a descending stream of liquid that will enter into a fractionating process, producing a close separation between absorption oil and gasoline by a series of 10 to 12 contacts.

The flow diagram illustrated shows a vent tank between the heat exchanger and preheater, a trap for releasing water from the top section of the still, and a reflux or primary condenser separate from the final gasoline condenser. These details may, or may not, be utilized in a modern fractionating still system, depending upon the individual plant problem.

Other details of the plant illustrated differing from previous plants, consist of the more general use of automatic controls, adequate surge tanks, and a reabsorber. The reabsorber receives vapors from the still run tank. These vapors contain considerable gasoline vapors that would otherwise be lost. The reabsorber is usually operated with a very low oil circulation in order to recover only the heavier gasoline fractions, thus preventing the excessive recirculation of lighter hydrocarbons.

The stabilizer illustrated is of the so-called, high pressure type. These units usually operate at pressures between 125 and 250 pounds. They differ from the old low pressure type stabilizers principally in the operation of the entire system at a pressure sufficiently high for the condensation of reflux with a water cooled condenser. When operated in this manner, a reflux rate to obtain a very close separation between the gasoline and "waste" products may be economically used. These stabilizers are operated with automatic controls under as nearly constant conditions as can be obtained. Their operation is more or less divorced from the rest of the plant, a surge tank being utilized between the distillation and stabilization units in order that the stabilizer may be operated at a constant rate as well as constant temperature and pressure conditions, regardless of the fluctuations in the operation of the plant.

Note: The above discussion is the seventh of a series tracing chronologically the major changes made in gasoline plant design and operation since the earliest compression unit.

Ten-Pound Motor Fuel Answer of Independents

Among many of the rank and file of independent natural gasoline manufacturers the conclusion appears to have been reached that they must enter into active competition with refiners by producing a 10-pound motor fuel and sell direct to jobbers. Smoldering dissatisfaction has been apparent for months, but help was expected in one form or another, and only a month ago hopes were raised to a high level through the greater recognition given the industry by Administrator Ickes.

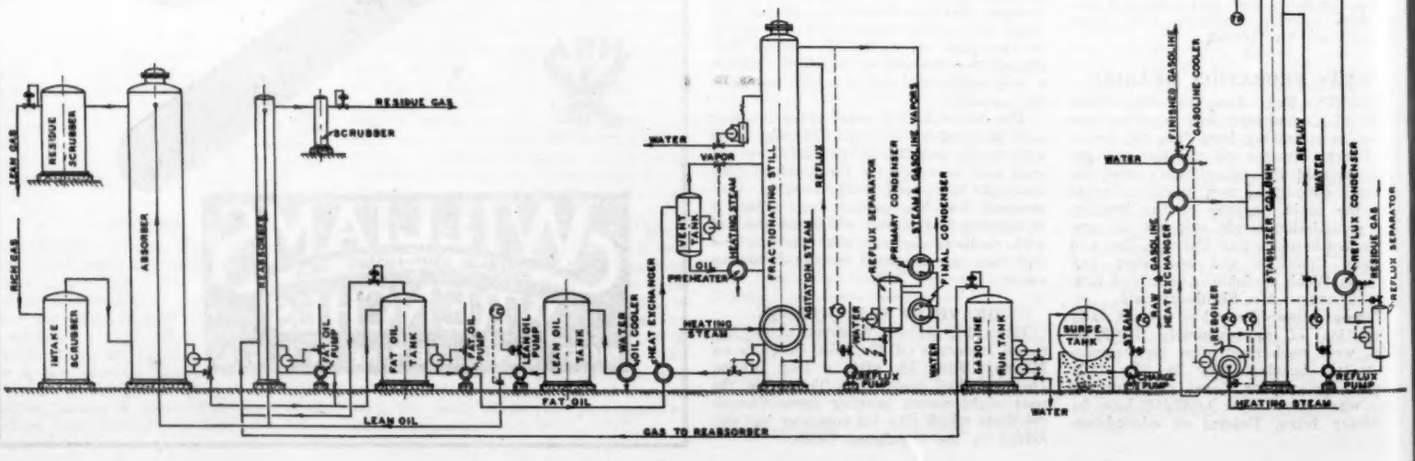
A committee has been busy in Washington trying to work out some equitable method for controlling production, and the co-operation of refiners has been sought. The latter promised immediate and effective relief.

Instead, these manufacturers now see a price of 1¼ cents being placed upon the material that only one week ago was selling at double this amount. The thespian decline has stirred a large enough number of these manufacturers but it is reasonable to suggest that the quantity of 10-pound material to be available over the immediate future will be a major factor in the motor fuel market.

A few plants scattered throughout Oklahoma, North Texas and the Panhandle have been converted to manufacturing the new material and approximately 10 cars are available daily.

The motor fuel being offered and which will probably serve as a basis of quality for future expansion of sales has a gravity between 68 and 70, an endpoint under 350° F. and an octane rating between 60 and 65. The vapor pressure is held to 10 pounds for the present season, but would probably be altered as weather conditions permit. The most liberal attitude taken by the Federal Government in regard to higher vapor pressure motor fuels and the favorable effect this will have upon the state regulations promises to give motor fuel made from natural gasoline a "better break" as time goes on.

The advantages the natural gasoline manufacturer holds over the refiner in the economic production of motor fuel have been recognized, but no concerted effort has been made to sell the material in large quantities in direct competition with refiners, because of the duplication of sales efforts. Independent manufacturers feel they can afford to undertake some program of direct sales representation now and that they will be able to support it.



Unsettled Aspect in Chicago Market; Cheap Gasoline Overspreads Area

By SPECIAL CORRESPONDENT

CHICAGO, June 18.—Disappointment over recent performance of the tank car market is combining with hope for favorable action on the new East Texas refining-marketing program to give the general oil market situation a rather spotty and unsettled aspect here. Tank car gasoline prices have lost most of the ground gained in May and burning oils are down to the lowest levels in months, although it is hoped by sellers that at least a part of this situation can be corrected with initiation of the proposed buying plan.

Cheap gasoline has overspread the central states territory pretty generally. It is difficult to get an accurate idea of the total amount of material available to the market, but it has served to keep jobbers skeptical of the buying side of the market. A price of 3½ cents on low octane motor here at week-end and out of East Texas quite low prices were heard.

More Cheap Crude

Jobber buying of gasoline in the refinery market is slack. Even low prices have not tempted them to buy much. They do not appear overconfident of early market strengthening. Some of them have been inquiring here and there. They have been forced to put their orders for comparatively good totals on contracts, because their gallonage, along with the business of most majors, has been quite good.

Some Blending

Easier prices on natural gasoline have been in keeping with refinery price weakness. Some jobbers are beginning to take natural a little more freely, however, and there is a certain amount of blending currently.

High octane gasolines have been holding their own fairly well. Their declines have been much smaller than that of third-grade material.

Kerosene

The rush planting of late crops in various sections of the country has aided demand for kerosene, but prices have not been aided to any substantial extent. Offers of this material are more than offsetting the demand, with the result that prices are fractionally lower again. Some majors recently have placed a certain amount of kerosene on the market at prices calculated to move it.

Distillates

Because some refiners do not wish to treat their products at extra expense to make it into finished kerosene, the amount of available distillate appears to be fairly large at this time and prices have been sinking slightly. The tank truck distributors of these heating oils are quite hesitant about buying to fill storage for autumn and winter and say they will not do so except at lower prices.

Fuels

There has been a slight letup in the strength which has pervaded fuel oils and gas oils here. Offers are a little more liberal. Buying is slower. Large consumers are not yet sure of themselves in connection with labor difficulties. Much interest centers on the question of third-quarter fuel contracts of such large consumers as the steel industry includes.

Naphthas

The good continuing demand for solvents and naphthas is proving sufficient to maintain a fairly good tone in these products, with prices unchanged.

Lubs

Lubs are quiet. Demand has been fairly good, although talk of price irregularity is increasing. Retail sales are reported at good levels.

Wax

Wax demand remains in good call at strong prices, and inquiry is still coming in at a fairly good rate.

Coke

Petroleum coke has shown no change. The tone is steady, interest at a rather low ebb.

Crude Oil Prices

(Continued from Page 29)

Effective September 29 in Salt Flat by Shell Petroleum Corp.

Rocky Mountain States

Iles, light (Sept. 29, 1933)	$.96
Iles, heavy (Sept. 29, 1933)	.90
Florence, Colo. (June 17, 1933)	.30
Fort Collins and Wellington, Colo. (June 17) .....(See Salt Creek prices)	
Big Muddy (Sept. 29, 1933)	1.01
Frannie, light (May 1, 1934)	.70
Frannie, heavy (Sept. 29, 1933)	.62
Salt Creek and LaBarge (Sept. 9, 1933) See Stanolind Mid-Continent price schedule	
Grass Creek, light (Sept. 29, 1933)	1.18
Grass Creek, heavy (Dec. 15, 1932)	.45
Elk Basin (Sept. 29, 1933)	1.18
Rock Creek (Sept. 29, 1933)	1.02
Dutton Creek (July 8, 1933) .....See Mid-Continent gravity prices	
Lance Creek (Dec. 16, 1932)	.92
Poison Spider (Mar. 5, 1931)	.70
Hudson (June 2, 1931)	.65
Lander (Mar. 5, 1931)	.40
Rex Lake (Feb. 22, 1930)	1.10
Osage	1.08
Lost Soldier (Sept. 30, 1933)	.88
Hamilton Dome (Dec. 16, 1932)	.25
Torchlight (Sept. 29, 1933)	1.18
Greybull (Sept. 29, 1933)	1.18
Pondera	1.15
Sunburst (Sept. 29, 1933)	1.35
Cat Creek, Montana	1.07
Hogback (Sept. 29, 1933)	1.11
Lea County, N Mex. (Sept. 29, 1933)	.75
Maljamar (Sept. 29, 1933)	.70
Artesia-Jackson (Dec. 1, 1933)*	.75

Note—Salt Creek, Torchlight, Elk Basin, Grass Creek, Frannie, Greybull, Hogback and Iles by Stanolind Oil & Gas Co. Elk Basin, Grass Creek light, Big Muddy, Rock Creek and Sunburst by Ohio Oil Co. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective September 29, 1933, by Humble Oil & Refining Co. and other buyers; Fort Collins, Wellington, Orchard, Florence, Big Muddy, Cat Creek, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro.

*Continental Oil Co.

North Louisiana and Arkansas

Smackover, Ark. (all grades)	$.70
Tullos-Urania, La. (Jan. 13, 1934)	.87
Nevada, Ark. (Sept. 29, 1933)	.60
East El Dorado (Sept. 29, 1933)	.70
Converse, La. (Mar. 17, 1934)	1.03
Elm Grove, La. (Sept. 29, 1933)	.75
Holly, La. (Mar. 17, 1934)	1.03
Pleasant Hill, La. (Mar. 17, 1934)	1.03
Zwolle, La. (Mar. 17, 1934)	1.03
Champagnolle, Ark. (Mar. 17, 1934)	.81
Lisbon, Ark. (Mar. 17, 1934)	1.03
Stephens, Ark. Sept. 29, 1933)	.70
Urbana, Ark. (Mar. 17, 1934)	.60
Other fields .....(See gravity table)	

Note—Smackover: Effective September 29, 1933, Texas Co., Magnolia Petroleum Co., Standard of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co. and Phillips Petroleum Co. East El Dorado posted by Magnolia Petroleum Co. and Gulf Refining Co., Nevada by Standard Oil Co. of Louisiana. Urania posted by H. L. Hunt, Inc., and Louisiana Oil Refining Co. Converse, Holly, Zwolle and Urbana by Standard Oil Co. of Louisiana; Elm Grove by Simmons Oil & Refining Co.; Pleasant Hill by Standard Oil Co. and Magnolia Petroleum Co; Champagnolle by Standard Oil Co. and Lion Oil & Refining Co.

Eastern States

TIDE WATER PIPE CO.
(Effective May 1, 1934)

Bradford, Pa.	$2.55
Allegany, N. Y.	2.55

SOUTH PENN OIL CO.
(Effective May 1, 1934)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field)	$2.55
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.32
Pennsylvania Grade Oil in Eureka Pipe Line lines	2.17
Pennsylvania Grade Oil in Buckeye Pipe Lines lines	2.07
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Oct. 2, 1933)	1.32

PENNZOIL CO.
(Effective May 1, 1934)

Pennsylvania Grade Oil in National Transit Lines:	
Group A ..... Includes Cochran, Franklin, Hamilton and Doolittle districts.	$2.47
Group B ..... Includes Titusville district.	2.46
Group C ..... Includes Turkey and Tidioute districts.	2.46
Group D ..... Includes Bear Creek and Porkey districts.	2.44
Group E ..... Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson Kennerdell, Emlenton, Tiona, Lacey and Kinzua districts. Price depends on length of pipe line haul to plant at Oil City.	2.42

PURE OIL CO.
(Effective May 1, 1934)

Cabin Creek, W. Va.	$2.17
Bradford Hollow, W. Va.	2.17
Kelly Creek, W. Va.	2.17

Middle Western States

OHIO OIL CO.
(Effective September 29, 1933)

Lima	$1.30
Illinois (Jan. 5, 1934)	1.13
Princeton, Ind. (Jan. 5, 1934)	1.13
Plymouth	Shut in
Western Kentucky	1.18
Midland, Mich. (Sept. 30, 1933)*	1.02
Oceana, Mich. (Oct. 5, 1933)	.90
Somerset, Ky. (Sept. 30, 1933)	1.23
Hart County, Ky. (Oct. 1, 1933)	1.18

*Posted by Pure Oil Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted price. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted price includes premium. Hart County, Kentucky, crude purchased by Stoll Refining Co. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

Canada

Ontario (September 9, 1933):	
Petrolia*	$2.10
Oil Springs*	2.17
Turner Valley (May 21, 1934):†	
Clear Naphtha	$2.55
Discolored naphtha	2.31
Crude oil, 50 gravity	2.19
Crude oil, 45 to 49.9	2.07
Crude oil, 40 to 44.9	1.50

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Mexico

Panuco*	89½

*F.o.b. ship, based on March transactions and exclusive of production and export taxes and bar dues.

California Crude Oil Prices

STANDARD OIL CO. OF CALIFORNIA
(Effective September 6, 1933)

For current purchases of crude oil at the well (unless otherwise specified.) (All gravities above those quoted take highest price offered in that field.)

Gravity—	Long Beach	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier, La Habra	Montebello	Santa Fe Springs	La Habra-Coyote	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga	Coyote
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	....	$.65	$.65	$.65	$.65	....	$.65	$ 57	$.57	$.57	$.65
15-15.9	.65	.65	.69	.69	.66	.69	....	.66	.65	.65	.65	....	.65	....	....	....	.65
16-16.9	.66	.65	.72	.73	.69	.73	....	.69	.67	.68	.65	....	.65	....	....	....	.65
17-17.9	.69	.65	.75	.76	.73	.76	....	.72	.70	.71	.65	....	.68	....	....	....	.68
18-18.9	.72	.65	.78	.80	.76	.79	....	.75	.74	.74	.65	....	.71	.61	.61	.59	.71
19-19.9	.75	.65	.81	.83	.80	.82	....	.78	.78	.78	.65	....	.74	.64	.65	.62	.74
20-20.9	.78	.68	.83	.87	.83	.85	....	.81	.82	.81	.66	....	.78	.67	.69	.65	.78
21-21.9	.81	.72	.86	.90	.87	.88	....	.83	.85	.84	.69	$.72	.81	.70	.73	.68	.81
22-22.9	.84	.76	.89	.94	.90	.92	....	.85	.89	.87	.72	.76	.84	.73	.76	.72	.84
23-23.9	.88	.81	.92	.97	.94	.95	$.83	.89	.92	.90	.76	.79	.87	.77	.79	.75	.87
24-24.9	.91	.85	.95	1.01	.97	.98	.86	.92	.97	.93	.80	.83	.90	.81	.82	.78	.90
25-25.9	.94	.89	.98	....	1.00	1.01	.90	.95	1.00	....	.85	.87	.93	.85	.85	.81	.93
26-26.9	.97	.93	1.01	....	1.04	1 04	.94	.98	1.04	....	.89	.90	.96	.89	.88	....	.96
27-27.9	1.00	.98	1.04	....	....	1.07	.97	....	1.08	....	....	.94	.99	.93	.91	....	.99
28-28.9	1.03	1.02	1.07	....	....	1.10	1.01	....	1.11	....	....	.98	1.02	.97	.94	....	1 02
29-29.9	1.06	1.05	1.09	....	....	....	1.04	....	1.15	....	....	1.01	1.05	1.01	.97	....	1.06
30-30.9	1.09	1.10	1 12	....	....	....	1.08	....	....	....	....	1.05	1.09	1.05	1.00	....	1.09
31-31.9	....	....	....	....	....	....	1.12	....	....	....	....	1.08	1.12	1.09	....	....	1.12
32-32.9	....	....	....	....	....	....	1.15	....	....	....	....	1.12	1.15	1.13	....	....	1.15
33-33.9	....	....	....	....	....	....	....	....	....	....	....	1.16	1.18	1.17	....	....	1.18
34-34.9	....	....	....	....	....	....	....	....	....	....	....	1.19	1.21	....	....	....	1.21
35-35.9	....	....	....	....	....	....	....	....	....	....	....	1.23	....	....	....	....	....
36-36.9	....	....	....	....	....	....	....	....	....	....	....	1.26	....	....	....	....	....
37-37.9	....	....	....	....	....	....	....	....	....	....	....	1.30	....	....	....	....	....
38-38.9	....	....	....	....	....	....	....	....	....	....	....	1.34	....	....	....	....	....

Additional Standard Oil Quotations

Elwood Terrace—F.o.b. ship, 33 degrees, $1.03; 34 degrees, $1.06; 35-35.9, $1.09; 36-36.9, $1.12; 37 degrees and over, $1.15.

Newhall—14 degrees and over, 57 cents.

McKittrick and Kern River—14 degrees and over, 57 cents.

Wheeler Ridge—14 to 17.9 degrees, 57 cents; 18-18.9, 58 cents; 19-19.9, 61 cents; 20-20.9, 64 cents; 21-21.9, 67 cents; 22-22.9, 70 cents; 23-23.9, 73 cents; 24-24.9, 76 cents; 25 degrees and over, 79 cents.

Kettleman Hills—33-33.9 degrees, 93 cents; 34-34.9, 96 cents; 35-35.9, 99 cents; 36-36.9, $1.02; 37-37.9, $1.05; 38-38.9, $1.08; 39 degrees and over, $1.11.

The Texas Co. posted in Shiells Canyon, South Mountain and Santa Paula as follows: 14 to 17.9, 57 cents; 3 cents added for each degree up to and including 26-26.9 degrees at 84 cents; then 4 cents added for each degree up to and including 30 degrees and over at $1. Company posts Standard Oil Co.'s Montebello prices in Montebello and North Whittier, and posts Standard Oil Co. prices in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield and Santa Fe Springs, all effective September 6.

General Petroleum Co. posts Standard Oil Co. prices in Athens, Rosecrans and Signal Hill; Alamitos Heights up to 26-26.9; Santa Fe Springs up to 35-35.9; Richfield up to 25-25.9; Brea Canyon and Olinda up to 25-25.9, and Torrance up to 25-25.9.

Union Oil Co., effective September 6, posts same price as Standard Oil Co. in all fields in which both purchase, excepting that in Athens-Rosecrans, Union Oil Co. posts 21-21.9, 72 cents, and 33-33.9, $1.18; 34-34.9, $1.21, and 35-35.9, $1.24.

Associated Oil Co., effective September 6, posted same prices for the same grades as Standard Oil Co. of California, excepting that in some fields its gravity scale stops as follows: Huntington Beach, 26 degrees and over; Seal Beach and Alamitos Heights, 26 degrees and over; Coyote Hills, 23 degrees and over; Richfield, 25 degrees and over; Torrance, 25 degrees and over; Inglewood, 24 degrees and over; Santa Fe Springs, 35 degrees and over; Midway-Sunset, Elk Hills, Buena Vista Hills, 30 degrees and over. Also Associated pays 52 cents for oil of 11 to 13.9 gravity in McKittrick, Kern Front, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills and Coalinga.

JUST 2 YEARS AGO . . . . .

IN JUNE, 1932, WE SAID . . .

AND WE ALSO SAID . . .

There Never Was A Better Time To REPLACE OBSOLETE REFINERY EQUIPMENT

It is not a question of whether a company can afford to buy new equipment. Rather, the question is, how long can a refinery afford to operate units which impose an excess charge on the cost of a product which must be sold competitively?

Any producing unit that cannot compete in yield and operating cost with the performance of today's equipment is a money-waster. It is obsolete—even though it was installed only a few years ago.

Every Lummus proposal for new construction or modernization invites consideration and decision upon one basis — the earning power of the installation. Lummus design and Lummus construction make possible an attractive return on the investment—even when you include in the investment figure the present value of the replaced equipment.

In refinery equipment, too, the 1932 dollar buys more—probably a great deal more than next year's dollar will purchase. There never was a better time to replace obsolete refinery equipment.

THE LUMMUS COMPANY
50 Church Street • New York City

LUMMUS
PETROLEUM REFINING PLANTS

Both of these statements have been verified by time . . . Many dollars have been wasted—many profit dollars have been sacrificed—by the operation of less than efficient equipment. And the 1932 dollar *did* buy more in engineering and equipment.

Much equipment that was obsolete in 1932 is still in service—imposing an excess charge on the cost of a product. Why not replace it—with equipment of higher earning power.

THE LUMMUS COMPANY • 50 CHURCH STREET, NEW YORK, N. Y.

LUMMUS
PETROLEUM REFINING PLANTS

Three Areas in Bee County, Southwest Texas, Attract Attention With Oil and Gas Shows

SAN ANTONIO, Tex., June 18.—Much interest in the Southwest Texas area during the past week was centered in Bee County. A big gasser making some oil west of the old Tuleta area, along with active drilling campaigns for both the North Pettus area and the Caeser district have brought this county into the limelight and interest will probably continue to be focused on these areas for several weeks.

Dirks Brothers' No. 1 Skinner & Harris, west of the old Tuleta development, came in during the past week for estimated 25,000,000 feet of gas with 50 bbls. of oil daily. The well was flowing through ¼-inch choke and had 1,400 pounds pressure on tubing and 1,500 pounds on casing. It topped the Pettus sand at 3,950 feet and bottomed hole at 3,973 feet. On a 10-minut drill stem test from 3,935-62 feet, before bringing the well in, it showed 60 feet of mud and a gasoline odor and built up 400 pounds pressure with ¼-inch choke on bottom and ⅛-inch choke on top. The bottom part of the sand is said to have showed considerable more saturation than the top and it is the general belief that the well would have made a good producer had it been carried deeper, but operators decided to complete the well at its present depth after securing a market for the gas. Since the completion of the well the area has witnessed an extensive lease and royalty play with leases last reported going for $150 cash and the same amount out of oil. It is reported the Pettus refinery purchased a one-fourth interest in the Dirks' well for a reported consideration of $10,000 cash and the same amount out of oil. Late in the week Dirks Brothers were moving in rig for another test in the area and on the Rapp 40-acre tract.

North Pettus Area

In the North Pettus area, which takes in parts of Bee, Karnes and Goliad Counties, two tests were waiting for cement after topping the sand and running casing. Magnolia Pet. Co.'s No. 3 Porter, an offset to Weinert's No. 1 Smith, producer, topped sand at 3,649 feet and ran casing without making a drill stem test. Houston Oil Co.'s No. 1 Neihaus, west of Magnolia's No. 1 Scarborough, topped gas sand at 3,617 feet and bottomed hole at 3,630 feet. It had set casing and was waiting for cement after making a drill stem test. The area has seven other tests that are either active or will be spudded within a week. Houston Oil Co.'s No. 1-A Neihaus, a north offset to its No. 1, was waiting for cement at 420 feet after setting surface casing. Houston's No. 2-B Neihaus, located 893 feet from E line and 260 feet from N line of lease was a location. Magnolia Petroleum Co.'s No. 2 Scarborough, an east offset to Houston's No. 1-B Neihaus, was drilling at 360 feet. Jim Kendricks & J. W. O'Byrne's No. 1 Runge State Bank was rigging up and drilling a water well. Sun Oil Co.'s No. 1 Scarborough, a southwest offset to the Weinert's No. 1 Smith, had set surface casing. United Production Co.'s No. 45 Ray, on a drill stem test from 4,033-47 feet in 10 minutes showed 31 fourbles of salt water through ¼-inch chokes on top and bottom. This well was formerly completed in the Pettus from 3,674-95 feet. H. H. Weinert's No. 2 Grady Smith, 660 feet northeast of No. 1, was rigging up.

Abandonment in Caeser Area

In the Caeser area and west of Houston's No. 1 Miller, Caeser Oil Co.'s No. 2 R. E. Miller, in the F. Lewis Survey, was abandoned at 3,400 feet, with no showings of importance encountered. R. A. David was moving in material for No. 1 Baptist Church, northeast of Caeser's No. 1 Pullin, discovery well. Houston Oil Co.'s No. 1 Miller, west offset to Caeser's discovery well, was preparing to complete for a gas well. The well drilled to a total depth of 3,404 feet and set casing on bottom. The casing was then perforated around 3,023 feet and on a 5-minute drill stem test from 3,030-40 feet it built up 452 pounds pressure with ¼-inch choke on top and ⅛-inch choke on bottom. It topped the Pettus sand at 3,023 feet.

Dash Production Co.'s No. 2 Ruhman, about 7 miles northwest of Pettus and in the Hodge Survey, was drilling below 2,000 feet. Heep Oil Co.'s No. 1 J. C. Wood, about 5 miles southeast of Beeville, and in the F. Crane Survey, was washing in with total depth of 4,201 feet. The well was formerly carried to 4,722 feet and was later whipstocked and drilled to its present depth where it showed a considerable amount of gas and an odor of oil before deepening. Phillips Petroleum Co.'s No. 1 Morgan, in the Eyles Survey, was preparing to start up and carry the well on down to 6,500 feet. The well has been waiting on cement after setting 7-inch casing at 6,081 feet.

Circle W Oil Co.'s No. 1 Welder, second test for the recently discovered Angelita Field in San Patricio County, was drilling below 5,800 feet. It will be carried to around 6,000 feet and if no production is found it will then be plugged back to the regular Angelita pay at 5,378 feet where it flowed oil and salt water. Atkins & O'Neil and Continental Oil Co.'s No. 2 Welder, two locations south of Circle W Oil Co.'s well, was moving in a rig.

At Sinton, in San Patricio County, Plymouth Oil Co.'s No. 2-A Welder, 1,320 feet due east of No. 1-A, was coring 3,950 feet. Heep Oil Co.'s No. 1 R. Welder, about a mile southwest of the discovery, had completed derrick. Plymouth's No. 1-B Welder, 3,500 feet northwest of No. 1-A, was spudding. Petrol Oil Corp.'s No. 1 R. H. Welder, west of the discovery, was rigging up.

Bunte and others' No. 1 C. C. Smith, about 3 miles southwest of Odom and in the A. Armstrong Survey, was drilling below 5,900 feet.

In McMullen County, LeFevre & Spice's No. 2 Hagist, in Section 17, has been abandoned as dry with total depth of 2,256 feet. It had water in the Pettus sand from 2,040-55 feet.

In Starr County, Danvers & Harrison's No. 1 M. Guerra, in Porcion No. 55, has been abandoned as dry with total depth of 1,784 feet. North of production in the Guerra area and across the line in Jim Hogg County, Sun Oil Co.'s No. 1-E Guerra & Sons, was drilling 2,430 feet.

Gas Deal Is Reported

Goodwin Yantis' No. 5 Kelsey-Bass, in the Goodwin-Yantis Subdivision of Porciones 86-87 of the Ancient Jurisdiction of Camargo, has been completed for 20,000,000 feet of gas at 685 feet. It is reported that the properties of the Los Olmos Oil & Gas Co. in the shallow Los Olmos Pool has been sold to the St. Mary's Oil & Gas Co. of West Virginia. The transaction included 4,000 acres with 50 producing wells making a total of 275 bbls. of oil daily.

About 8 miles north of the Jeffries Lambeth area in Starr County, McDonald & Campbell's No. 1 C. C. Bowman, in Block 13, was preparing to abandon with a total depth of 3,500 feet.

About 6 miles northeast of the Government Wells Field and 2½ miles northeast of the Eagle Hill Pool, in Duval County, Luse & Cloyes' No. 1 Hagist, in Section 265, was making an average of 50 bbls. fluid daily, 50 per cent of which was salt water. The well stood three days and fluid rose 300 feet in the hole, 60 per cent of which was salt water. Total depth of the hole is 2,168 feet, where it is said to have 8 feet of sand. Mortimer's No. 1-B Peters, in Survey 196, had sand from 2,438-50 feet and on a 20-minute drill stem test from 2,438-47 feet showed 60 feet of mud with a show of oil. At last reports the well was 2,453 feet in shale. It had water sand from 1,901-12 feet and sand 1,828-39 feet, which showed 100 feet of oil and mud on a drill stem test.

In the Eagle Hill Pool in Duval County, S. R. C. Corp.'s No. 1-C Foster in Survey No. 270, had the Cole sand from 1,483-84 feet, which showed dry and at last report was drilling ahead below 1,527 feet.

In the southwestern part of Hidalgo County, Davis & Harrison's No. 1 Lula George was drilling at 3,260 feet. Otto Woods' No. 1 John Lawrence, also in the southwestern part of the county, was drilling below 2,000 feet. The well is reported to have had a show of oil around 1,900 feet. Union Sulphur Co.'s No. 1 American Rio Grande Land & Irrigation Co., in the southeastern part of the county, was drilling 5,980 feet. About 7 miles south of McAllen, Rogers and others had spudded No. 1 Fairbanks.

Abandoned as Dry

About 7½ miles north and east of Kenedy, in Karnes County, Otto Krouse and others' No. 1 Marge Ruckman, in the Musquez Survey, has been abandoned as dry with total depth of 3,262 feet. Lovering and others' No. 1 Goff, a wildcat test about 3 miles northeast of Kenedy, was coring 2,650 feet. In the southeast corner of the county, Ray's No. 2 Radford, in the M. Nichols Survey, was drilling at 2,100 feet.

In Nueces County, Diadem Oil Co.'s No. 1 J. C. Mayo, near Robstown and in Section 23, was drilling below 5,500 feet and will be carried to 6,500 feet. Benedum & Trees' No. 1 Bickham, in the J. Farras Survey, Block 9, was coring 5,550 feet.

In southern Jim Wells County the Trinity Drillers is reported to have sold a part of its Seeligson ranch holdings to the Sinclair Prairie Oil Co. The acreage involved is around 400 acres of leases and is described as the north 280 acres of Section 71, and the south 120 acres of the E half of Section 77.

In Bell County, Gus Winston and others' No. 3 Warrick, in the Elijah Ingram Survey, has been abandoned as dry with total depth of 3,599 feet.

About 2 miles north of Kimbrough, and in Travis County, Humble Oil & Refining Co.'s No. 1 P. C. Wells, in the James P. Kemp Survey, was drilling 755 feet.

United Production Co.'s No. 1 Bruni, just east of Bruni City, has been completed for 34 bbls. daily with total depth of 3,418 feet, opening the deepest sand discovery for the area. Sand was encountered from 3,410-18 feet. The 7-inch casing was set at 3,406 feet.

Wildcat Operations in Southwest Texas

Week Ending June 16

BANDERA COUNTY

Company, well, farm name, section and block—	Remarks:
Parkford et al's No. 1 Mrs. R. L. Duke, G.H.&S.A. Sur., Sec. 7	Material.
Peerless O. & G. Co.'s No. 1 Garrison Sur. No. 506, 1,500 ft. from N and 2,700 ft. from E lines of Sur. (8 mi. SW of Medina)	Rigging up and S.D.

BASTROP COUNTY

Chas. E. Anderson's (Ca-Tex O. & G. Dev. Co.) No. 1 Pendergrass, 1,343 ft. from NE line, 310 ft. from SE line of 130-ac. tract in Henry Warnell Sur	Abd. 1,815 ft.
Marts & Beavens' No. 1 Davenport, 2,600 ft. NW line, 3,550 ft. SW line in Thos. Garratson Sur., 1 mile SE of Elgin	Drlg. shale 1,030 ft.
McGahan & Vogel's No. 1 W. P. Watts, 150 ft. SE line, 750 ft. SW line of 75-ac. tract in J. W. Burton Sur. N of Yoast Field	Drlg. shale 1,302 ft.
Ogden & Reed's No. 1 Little, 200 ft. from NE line, 150 ft. NW line, Maximilian Sur.	T.D. 2,338 ft. in chalk; abd.
N. Pennett's No. 1 Carroll, 330 ft. NW line, 990 ft. SW line of 40-ac. tract in Mays Sur.	Spud.

BEE COUNTY

Caeser Oil Co.'s No. 1 R. E. Miller, F. Lewis Sur.	S.D. 60 ft.
Caeser Oil Co.'s No. 2 R. E. Miller, 350 ft. from W line, 150 ft. from S line of 100-acre tract in F. Lewis Sur.	T.D. 3,400 ft. and abd.
Caeser Oil Co.'s No. 1 Pulling Est., F. Lewis Sur.	Derrick.
Dash Prod. Co.'s No. 2 Ruhman, 885 ft. from SW line and 2,113 ft. from SE line of Hodge Sur.	Drlg. 2,000 ft.
R. A. David's No. 1 Baptist Church, center of 3-ac. church lot, or 150 ft. E of N line of Pullin est., 27-ac. tract in F. Lewis Sur.	Moving in rig.
Dirk Bros.' No. 1 Skinner-Harrison, 160 ft. from N and 990 ft. from W line in NW Section 10 of Ragley Subd. of Chittim Ranch, 1½ mi. from Tuleta	Top sand 3,950-62 ft.; T.D. 3,973 ft.; est. 50 bbls. oil daily and 25,000,000 ft. gas.
Heep Oil Co.'s No. 1 J. C. Wood, 466 ft. from N and E lines of F. Crane Sur.	T.D. 4,717 ft.; P.B. to 4,201 ft.; washing.
Houston Oil Co.'s No. 1 Miller	T.D. 3,404 ft.; completing for gas well.
Houston Oil Co.'s No. 1 Neihaus, 660 ft. W of Magnolia's No. 1 Scarborough	T.D. 3,630 ft.; running csg. after making D.S. test.
Elbert Jeanes' No. 1 G. L. Courtney, 1,400 ft. from E line, 330 ft. from S line of tract, G. A. Kerr Sur., 1¼ miles NE of Pettus	Rigging up.
Magnolia Pet. Co.'s No. 2 Scarborough, E offset to Houston's No. 1-B Neihaus	Drlg. 360 ft.
McLain et al's No. 2 Laura Weiss, B.&B. Sur., 660 ft. E of No. 1	T.D. 100 ft.; prep. to start up.
Phillips Pet. Co.'s No. 1 Morgan, 4,950 ft. from W, 3,270 ft. from N lines of 13,930-ac. tract, Eyles Sur.	T.D. 6,090 ft.; prep. to start up.
Worth Oil Co.'s No. 1 Rutledge, 1,000 ft. from N line and 300 ft. from E line of A. Hadley Sur.	Derrick.

BELL COUNTY

Gus Winston et al's No. 3 Warrick, 100 ft. N of James Scroggins' No. 1 Warrick, in Elijah Ingram Sur.	T.D. 3,599 ft.; abd.

BEXAR COUNTY

Joe Beckley's No. 1 fee, 3,160 ft. W and 150 ft. S at right angles from most northerly cor. of Morales Sur. (2 mi. SW of San Antonio)	Lime 1,270 ft.; S.D.

(Continued on Page 44)

Sixth Producing Area Opened in Ector County; Forty Locations in Wichita, 11 in Panhandle

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., June 18.—Another oil pool was assured the West Texas district the latter part of the week when C. J. Davidson and others' No. 1 Cummings, a wildcat in the northwest part of Ector County, struck an increase in oil and gas at 4,295-4,305 feet and filled up 2,300 feet with oil while drilling below 4,309 feet. It has had several showings of oil, the first being at 4,267-75 feet with increases from 4,278-80 feet. It is making an estimated 2,000,000 feet of gas and made one small head when the tools were drawn from the hole after showing oil from 4,278-80 feet.

This discovery opens the sixth producing area in the county. It is about 12 miles west of the North Cowden area and about 24 miles northwest of the Penn Pool, which was the first pool of importance in the county. The first pool in the county was the Cosden-Connell Pool, southwest of the Penn Pool, discovered about seven years ago.

A combination cable and rotary outfit designed by Mr. Davidson was used in drilling the hole. He has drilled many tests in West Texas, but this is his first discovery. Humble Pipe Line Co. will probably lay a line from the North Cowden area to connect as soon as the well proves a commercial producer. The test is in Section 10, Block 45, Township 1n, T.&P. Survey, in the extreme northwest corner of the county.

Landreth Production Co.'s No. 1-A T. P. Land Trust, located in Section 3, Block 43, Township 1s, T.&P. Survey, which made a south extension to the North Cowden area, is preparing to plug back again after failing to shut off the water encountered at 4,276 feet. It will be plugged back to 4,297 feet.

Andrews County

Humble Oil & Refining Co.'s No. 1 Means, a wildcat in the north central part of Andrews County, in Section 2, Block A-35, P.S.L. Survey, is reported to have topped the brown lime high at 3,845 feet, and is drilling at 3,906 feet. The favorable appearance of the test has caused quite a leasing campaign throughout the surrounding counties, the majority of the activity taking place in the western part of Gaines County, Yoakum and Terry Counties.

Runnels County

The McMillan Pool, Runnels County, was extended 1,000 feet northeast when Petroleum Oil Interest Inc.'s No. 1 T. B. Brevard in subdivision No. 21 Norvell Travis Survey No. 533, flowed 139 bbls. of oil in one 10-hour period. It is bottomed at 2,523 feet and is credited with drilling 20 feet of sand. The company has made location for a north offset.

Crane County

Wahlenmaier and others' No. 1 W. P. Edwards, located in the north central part of Crane County, in Section 12, Block B-23, P.S.L. Survey, swabbed 70 bbls. of oil in 24 hours while cleaning out. It is east of the Waddell Pool.

Deep Tests

Humble Oil & Refining Co.'s No. 1 White & Baker in Section 44, Block Z, TC Survey, Pecos County, is drilling at 9,762 feet in lime. Gulf Production Co.'s No. 103 McElroy, another wildcat Ordovician test in Upton County, is drilling ahead at 10,350 feet in lime and chert.

Schleicher County

After being shut down for several days awaiting the consummation of some acreage deals around the test, John M. Cooper's No. 1 Bert Page, Schleicher County, was scheduled to resume drilling. Last week the test began spraying a small amount of high gravity oil following the striking of 1,000,000 feet of gas at 5,404 feet, the total depth.

Ward County

The Bennett Pool, Ward County, was extended a mile north when Sid Richardson's No. 1-B Johnson flowed 445 bbls. per day from a total depth of 2,548 feet. It is in Section 22, Block 34, H.&T.C. Survey. S. Caprito and others' No. 5 Pure-Bennett, in Section 16, Block 34, H.&T.C. Survey, flowed 522 bbls. in 24 hours through tubing; it is bottomed at 2,536 feet.

Glasscock County

In Glasscock County, Steve Currie No. 1 Turner pumped 61 bbls. on the second hour of a proration gauge at 2,160 feet. It is in Section 19, Block 33, Township 2s, T.&P. Survey. In the same section, H. O. Wooten No. 2 Sam Turner topped the pay at 2,238 feet and was completed for an initial production of 48 bbls. of oil per hour.

North Cowden Plan

Operators in the North Cowden area, Ector County, met at Fort Worth during the week and presented evidence to the Petroleum Administrative Board on plans for development in that area. Two plans were submitted, one by the Stanolind Oil & Gas Co., which calls for one well to every 40 acres, at center of the forty, and the Landreth Production Co.'s plan which calls for one well to 40 acres with the well anywhere on the forty, but not closer than 440 feet from any line. The evidence is being taken to Washington, and a decision is to be announced in about 10 days.

Humble Oil & Refining Co.'s No. 1 White & Baker, Ordovician wildcat test 6 miles west of the Yates Pool in Pecos County in Section 44, Block Z, T.C. Survey, made a drill stem test from 9,690 to 9,768 feet and sulphur water rose 9,500 feet in the hole. The test topped the Ordovician at 8,012 feet, making the bottom of the hole 756 feet in the Ordovician. This is the second test outside of the Big Lake Field to have been drilled to the Ordovician and it will probably be abandoned at 9,768 feet. The other Ordovician test which was drilled by the Stanolind Oil & Gas Co. in Crockett County, was abandoned in May, 1933, at 7,720 feet after being plugged back from 8,042 feet.

Wichita Falls

The Fain-McGaha Oil Corp. of Wichita Falls purchased the George L. Pace properties in the saturated lime area of Archer County, including the 160-acre Green lease with 10 wells, having a daily allowable of 80 bbls. per day, and the 327-acre Charles S. Arnold lease with 11 wells, having a daily allowable of 173 bbls. per day. The leases are in the Joseph Levin Survey. Consideration was reported as $475,000, of which $250,000 was in cash and the remainder out of oue-half of the oil produced.

Consolidated Oil Co.'s No. 1-T Waggoner, 1,800 feet south and 2,000 feet southeast of dry holes, opens another area to production on the W. T. Waggoner Estate Ranch. It logged oil sand from 1,883-96 feet and was completed for a 215-bbl. well on the pump.

There has been considerable drilling on the Waggoner Ranch, major companies as well as independents drilling on leases they have held for some time. There is also much cleaning out and reworking of leases on the ranch to bring back wells on production or increase the production in wells which have fallen off to but a few barrels per day.

The Portwood Pool of Baylor County registered a well this week when S. V. White and others' No. 1 W. H. Portwood in Section 1281, T.E.L. Survey, came in for 125 bbls. pumping from sand logged at 1,365 feet.

Forty Locations

Lack of rains and scarcity of water continue to slow down drilling activities, water being conserved for livestock. There were only 40 locations reported for the district and 39 tests completed this week, a number of tests being shut down for lack of drilling water.

Blair Baker, Jones & Stasney are moving in machinery to drill on a block of 6,000 acres located approximately 4 miles north of Crowell in Foard County. The location is on the J. W. Beverly farm in Section 469, Block "A," H.&T.C. Survey.

Texas Co., which has just completed its second good, high-gravity oil producing well on the Les K. Johnson ranch on the extreme west edge of Foard County, is moving the rotary rig to drill its No. 5 Johnson. Location is in the same section as the other two wells, Section 36, Block L, S.P.Ry. Survey.

Panhandle District

There were 11 locations staked in the Panhandle district with 8 completions reported. Gray County had 7 of the new locations.

The Woodley Pool, in southeastern Wheeler County, was extended a mile west when Anderson & Kerr completed their No. 1 Hunter for an initial production of 68 bbls. at total depth of 2,315 feet. Before completing it was plugged back to 2,190 feet and shot with 10 quarts from 2,183-88 feet. Location is in the northeast quarter of Section 48, Block 13, H.&G.N. Survey.

The Defenbaugh test on the Bradshaw ranch, approximately 6 miles southeast of the Osborn discovery in eastern Wheeler County, and about 7 miles east of Shamrock, is shut down at 2,200 feet after encountering water, appearing as a dry hole after logging some oil showings. This is a disappointment to operators watching the testing of the southeast trend from the Osborn Pool, which is producing from the dolomite.

Another failure of interest was Skelly Oil Co.'s test in Section 5, Block A-8, H.&G.N. Survey, 6 miles north of Shamrock in the area north of the river. It was abandoned at 2,254 feet.

Production in the district averaged 54,900 bbls. per day during the week.

Wildcat Operations in West Texas

Week Ending June 18

ANDREWS COUNTY

Company, well, farm name, section and block—	Remarks:
Fuhrman Pet. Co.'s No. 1-B Benner, 1,320 ft. from N line and 1,320 ft. from E line of Sec. 35, Blk. A-43, P.S.L. Sur.	Flowed 137 bbls. in 6 hrs.; T.D. 4,493 ft.
Honolulu and Llano Oil Co.'s No. 1 J. E. Parker, 1,320 ft. from S line and 1,470 ft. from W line of Sec. 7, Blk. A-44, P.S.L. Sur.	Moving in.
Humble Oil & Ref. Co.'s No. 1 R. M. Means, 660 ft. from N and 660 ft. from E of Sec. 2, Blk. 3-35, P.S.L. Sur.	Drlg. 3,535 ft.
Humble Oil & Ref. Co.'s No. 1 Kuykendall, 1,980 ft. from S and E lines of Sec. 24, Blk. A-46, P.S.L. Sur.	Bailing and testing; T.D. 4,511 ft.
Llano Oil Co.'s No. 1 J. E. Parker, 330 ft. from N line, 990 ft. from E line of Sec. 18, Blk. A-44, P.S.L. Sur.	Location.

BORDEN COUNTY

Continental Oil Co.'s No. 1 Johnson, 660 ft. from S line and 660 ft. from E line of Sec. 34, Blk. 32, Twp. 4n, T.&P. Sur.	Drlg. by tools 455 ft.

BREWSTER COUNTY

Joiner-McIntyre's No. 1, 853 ft. from S, 2,390 ft. from E of Sec. 31, Blk. 352, W. M. Mitchell Sur.	S.D. 1,450 ft.

COKE COUNTY

Wm. Hooper's No. 1 Gaston, 240 ft. from S line and 654 ft. from W line of Joseph Sur. No. 11	To set csg. at 2,450-75 ft.

CRANE COUNTY

Brandon et al's No. 1 J. Cowden, 330 ft. from N and 330 ft. from W line of Sec. 13, Blk. X, C.C.S.D.& R.G.N.G. Sur.	Spudded.
Gulf Prod. Co.'s No. 1 E. M. Snodgrass, 1,320 ft. from N and 1,320 ft. from W line of Sec. 1, Blk. B-25, P.S.L. Sur.	Bldg. derrick.
Wahlenmaier Petroleum Corp.'s No. 1 W. P. Edwards, 330 ft. from N and 330 ft. from E of SW cor. of the NE of Sec. 12, Blk. B-23, P.S.L. Sur.	Bailed 60 bbls. in 10 hrs.; T.D. 3,720 ft.; S.D. to run csg.

CROCKETT COUNTY

J. D. Young's No. 1 Shannon, 330 ft. from W line, 330 ft. from N line of Sec. 35, Blk. 1, G.C.&S.F. Sur.	S.D. 2,635 ft.

CULBERSON COUNTY

Miller Bros.' No. 1 fee, 1,980 ft. from N and 660 ft. from E line of Sec. 31, Blk. 97, P.S.L. Sur.	S.D. 1,110 ft.

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COMPLETIONS IN WEST TEXAS DISTRICT

Ector County

Shell Petroleum Corp.'s No. 2 Jones, pay 2,620-89 feet, initial production 515 bbls., total depth 3,689 feet, treated with acid.

Glasscock County

H. O. Wooten's No. 2 Sam Turner, pay 2,238-40 feet, initial production 44 bbls. on pump, total depth 2,240 feet.

Ward County

Caprito & Graham's No. 5 Pure-Bennett, top pay 2,415-2,536 feet, initial production 521 bbls., total depth 2,536 feet. Sid Richardson's No. 1-B Johnson, top pay 2,283-2,548 feet, initial production 445 bbls., total depth 2,548 feet. Sturm-Simms Oil Co.'s No. 2 Jones, top pay 2,494-3,060 feet, initial production 260 bbls. per day, total depth 3,060 feet.

Winkler County

Magnolia Petroleum Co.'s No. 5 Scarborough, top pay 2,842-3 feet, initial pro-

(Continued on Page 43)

Water Showing in Cherokee County Well Slows Buying of Leases and Royalties in New Area

By L. E. BREDBERG

DALLAS, Tex., June 18.—Buying of leases and royalties slackened this week, and prices fell perceptibly in the Rusk area of Cherokee County, when the Woodbine discovery of Wood, Young, Wolfe and others on the New Birmingham Development Co.'s lands in the Levi Jordan Survey, showed from 15 to 25 per cent salt water as the well was flowed on various size chokes through tubing. It has been cemented back 125 feet from the total depth of 5,120 feet, and a whipstock will be set and drilled out in hopes of picking up sufficient saturated sand without going into the water horizon.

Companies have been purchasing leases on a north and northwest trend, anticipating another shore line condition, while others believe this new producer is a west edge well and have been buying accordingly to the east. The test of the C. & G. Oil Co., about one-half mile east of the town of Rusk, and approximately 6½ miles northeast of the discovery, will be an exceptionally important test. If it proves a producer, those believing in a shore line will be considered right, and no doubt leasing and royalty buying activities will be renewed in the area on that trend.

Southern Gulf Oil Co.'s No. 1 Joe L. Bailey, in the center of a 164-acre tract in the L. R. Rhodes Survey, 4 miles northeast of Ponta, and approximately 16 miles northeast of the Cherokee discovery, in Cherokee County, will be another important test as it is on the trend being played by many. A test by Hunt Production Co. in the D. W. McNabb Survey, approximately 1½ miles due east of the discovery, is but tentative at present. Such a test would prove whether the discovery is on the west flank of the structure or shore line, and if the field is to spread to the east.

Rube Benton, independent geologist of Fort Worth, is given credit for dubbing the producing area a "misplaced shore line," as it is around 1,500 feet down dip from the East Texas Field which is a shore line condition, the southernmost end of which is approximately 27 miles northeast of the recent discovery in Cherokee County. The two nearest tests drilled, one about 5 miles west and another about the same distance south, are too remote to give sufficiently accurate data for correlating formations with the discovery to furnish anything definite on the subsurface geology of the area surrounding the well. Companies shooting the area with geophysical instruments may gain better information as to the type of structure in the area.

Cayuga Area

A test drilling on the northwest flank of the Cayuga area, by Roeser & Pendleton, Inc., on the Bowyer tract in the Everett Ritter Survey, approximately 1½ miles northwest of the discovery well in northwest Anderson County, is appearing only as a gas well at the present, but the owners are coring deeper to pick up saturated sand and make an oil producer. It is now coring from 4,075-88 feet, with a large volume of gas being struck at the former depth. A string of 5-inch casing has been ordered to case off a part of the upper gas sand. Elevation is 315 feet. The test is coring near the water level, consequently can be considered a northwest edge well, if it proves an oil producer. Unless the field is proven to the west and southwest, it now looks as if it would cover but a small area, with the saturated sand horizon already proven comparatively thin and offering light wells. There are 10 wells now producing in the field.

Gulf Production Co.'s No. 1 G. M. Collins, in the William J. L. Scott Survey, southeast of LaRue in Henderson County, logged the base of the Austin chalk at 4,570 feet and is drilling at 4,610 feet in Eagleford shale. This is the only active wildcat in this county in which there have been many dry holes drilled, especially during the past 12 months.

Mexia Test

An interesting test if drilled, according to reports, is proposed by Peyton Brothers, for the Mexia area. This is to be a 6,500-foot Trinity sand test. Two other such tests have been abandoned in the Mexia area. Another such test is now being drilled in the Corsicana-Powell Pool, Navarro County, by Wheelock and Collins of Corsicana.

Daniels Oil & Royalty Co. has plugged back its No. 1 P. D. C. Ball in the Aguilera Survey, Freestone County, to 4,840 feet and will redrill to 4,855 feet to try to eliminate the salt water the test made from bottom of the hole at 5,003 feet. It is rated good for 5,000,000 feet of gas, but a plugging back job to 4,865 feet failed to shut off the water, consequently, the further plugging. This wildcat gas discovery is about 1½ miles south of the town of Turlington, in an area in which Shell Petroleum Corp. leased a large block about three years ago.

Only two wildcat locations were staked in the district, one mentioned above. Bennett Brothers are drilling at 250 feet on their No. 1 T. E. Stewart in the William R. Bowen Survey, Navarro County. This test is approximately 10 miles southwest of Corsicana. Tide Water Oil Co. and Texas Seaboard Oil Co. have staked location for five more tests in the Cayuga Pool, northwest Anderson County. No locations have yet been staked in the Trinity River bed, west of the pool. Trinity State Oil Co., of Fort Worth, has lease on about 120 acres in the bed.

There are several tests contemplated for the newly opened area southwest of Rusk, but so far no locations have been reported. Several major companies now hold scattered leases in the proximity of the well, and independents also have acquired leases in the area, either of which may be expected to announce locations for tests in the near future.

Van Field

There were four completions registered for the Van Field this week, three being reported by Pure Oil Co., and located in the Van Joint Account, the unitized block. One other well was drilled, in the shallow producing area north of the pool. This was completed by Humble Oil & Refining Co. on the S. R. Ray farm. It is a Nacatosh sand test and was rated good for 3 bbls. pumping in one hour, on an initial test. Total depth is 1,244 feet. Only one loaction was staked in the pool, made by Pure Oil Co. on the A. G. Maxfield 107.8-acre farm in the Nacogdoches County School Land Survey.

EAST TEXAS FIELD

There were 86 completions registered in the East Texas Field, with 96 more locations staked. Special hearings are now being held by field men of the Railroad Commission to pass on applications for new drilling permits that are exceptions to the spacing rule. This is a result of a new order issued by the commission, and so far has not slowed up the staking of new locations, although it may do so within the next few weeks as the commission tightens down on issuing permits, if it does.

Conditions in the field are not improving. Overproduction continues practically unabated. The 30-day stay granted by the Federal Circuit Court at New Orleans in the Amazon case runs until July 7, restraining the Federal officials from interfering with the 37 defendants until that date, when the Amazon will apply for a writ of certiorari.

If the commission does not follow out its promise to stop overproduction, there is the possibility that a special session of the state legislature may be asked with the specific purpose of voting on an appointive oil and gas commission to replace the present elected board of three members, one incumbent running for the office at the present time.

Companies are again purchasing distress gasoline in the field, but this buying does not help the situation so far as retarding future manufacturing and piling up of gasoline stocks in the field is concerned. As a matter of fact, local refineries run more oil to make more gasoline with the hope they can again sell their surplus.

Stanolind Oil & Gas Co. is credited with a large size purchase of producing properties in the field. The H. C. Maxwell lease of the Hunt Production Co., in the Francisco Cordova Survey in Rusk County, was said to be involved. The lease is composed of 83.3 acres, and has 18 producing wells. Properties in the field have been selling on the basis of $40,000 per well, and more, which would run the consideration of this deal over $700,000 if paid for on such a basis.

The allowable of the field is now 505,571 bbls.; the overproduction is no doubt closely estimated at 100,000 bbls. per day.

Important Pipe Line Suit

The Texas Pipe Line Co., a common carrier in the field, has been named defendant in a suit filed for the Niagara Pipe Line Co., which seeks an injunctive order to force the former to accept legally tendered crude from the Niagara company for transportation to the Gulf Coast. The Niagara Pipe Line Co. operates a gathering system in the field, purchasing crude and gathering it and then engaging other larger lines to run the oil from the field.

The defendant company will undoubtedly cite state and Federal laws that make the transporter of crude liable for transporting illegal oil, and further require the transporter to determine by its own investigation that the oil is from a legal source. It is often difficult, if not almost impossible, to determine if the oil is legal oil, produced according to

East Central Texas Wildcats

Week Ending June 16

ANDERSON COUNTY

Company, well, farm name, section and block—	Remarks
Barnsdall Oil Co.'s No. 1 Loper, 467 ft. from N and W lines of 40-ac. tract, 1 mile SW of Cayuga, James Wilson Sur.	Drlg. 3,252 ft.
Harry Bass et al's No. 1 J. A. Campbell, 467 ft. from N and W lines of 151.30-ac. tract, James Wilson Sur.	Location.
Pete Burton et al's No. 1 Freeman Baptist Church, 105 ft. due W of NW cor. of W. Chancellor Sur. in center of a 2-ac. tract, W. T. Meredith Sur.	Location.
Hill and Hill's No. 1 R. E. Curtis, 467 ft. from N line and 250 ft. from W line of tract, B. Kimbrough Sur.	Location.
Roeser and Pendleton's No. 1 Virginia Boyer, 467 ft. from E line and 1,347 ft. from S line of 200-ac. tract, Everett Ritter Sur.	Waiting on cmt. to set; T.D. 4,070 ft.
Texas Seaboard Oil Co.'s No. 3 Edens, 467 ft. from N and E lines of tract, Samuel Snyder Sur.	Location.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 4 Edens, 2,871 ft. from N line and 467 ft. from E line of tract, Samuel Edmondson Sur.	Location.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 2 Robertson, 633 ft. from W line and 467 ft. from N line of lease, Samuel Snider Sur.	Location.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1-B Virginia Wills (Boyer), 467 ft. from S and E lines of lease, M. H. John Sur.	Location.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1-C N. N. Wills, 477 ft. from S line and 467 feet from W line of tract, Thomas Bristow Sur.	Location.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 2 Rampy, 467 ft. from N and W lines of lease, James Wilson Sur.	Drlg. 2,414 ft.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 G. W. Ware, 467 ft. from S line and 1,400 ft. from W line of 571.65-ac. tract, Thomas Bristow Sur.	Location.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 Lou Ella Horton, 467 ft. from N line and 467 ft. from E line of Horton 105.37-ac. tract, James Wilson Sur.	Waiting on cmt. to set; T.D. 4,078 ft.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 S. F. Robertson, 470 ft. from N line and 1,566 ft. from W line of 50.4-ac. tract, Samuel Edmondson Sur.	Waiting on cmt. to set; T.D. 4,085 ft.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 4 Wills, 470 ft. from most northerly S line and 467 ft. from E line of tract, W offset to Hill and Hill's No. 1 Tubbs, Samuel Edmondson Sur.	Waiting on cmt. to set; T.D. 4,093 ft.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 5 Wills, 1,400 ft. from most northerly S line and 467 ft. from E line of tract, W offset to Barnsdall Oil Co.'s No. 1 Tubbs, Samuel Edmondson Sur.	Drlg. 3,870 ft.

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state regulations. An approved tender by the Railroad Commission is not always considered a defense to the transporter.

The defendant company will defend the suit on the ground that its staff of investigators were unable to determine that the oil offered for transportation was from a legal source.

COMPLETIONS IN EAST TEXAS DISTRICT

Gregg County

Reynolds and Kimberlin's No. 1 Perry Estate, top sand 3,616 feet, initial production 100 bbls., total depth 3,628 feet. Shell Petroleum Corp.'s No. 15 Hampton, top sand 3,586 feet, initial production 37 bbls. in one-half hour through open tubing, total depth 3,660 feet. Smith and Darough's No. 5 C. C. Clemmens, top sand 3,615 feet, initial production 30 bbls. in one-quarter hour through open tubing, total depth 3,632 feet. Sparkman and Rusch's No. 1 E. Stone, top sand 3,634 feet, dry and abandoned, total depth 3,700 feet, M. Alexander Survey. Tide Water Oil Co.'s No. 29 Lake Devernia, top sand 3,488 feet, initial production 14 bbls. in 10 minutes through 1-inch tubing choke, total depth 3,530 feet. Twin Oil Co.'s No. 13 M. Bonner, top sand 3,624 feet, initial production 20 bbls. in one-half hour through open tubing, total depth 3,634 feet. United East & West Oil Co.'s No. 2 Sabine River, top sand 3,586 feet, initial production 60 bbls. per hour through open tubing, total depth 3,591 feet. Wood and Salone-Cooper's No. 7 J. H. Sheppard, top sand 3,576 feet, initial production 20 bbls. in one-quarter hour through open tubing, total depth 3,587 feet.

South Gregg County

C Champlin and Bass' No. 8 J. B. Watson, top sand 3,587 feet, initial production 55 bbls. in 25 minutes through open tubing, total depth 3,607 feet. DeArman and McMillan's No. 6 Strong and Alexander, top sand 3,651 feet, initial production 25 bbls. in one-quarter hour through open tubing, total depth 3,662 feet. Galvez Oil Co.'s No. 10 M. T. Cole, top sand 3,550 feet, initial production 30 bbls. in 40 minutes through three-quarters inch tubing choke, total depth 3,562 feet. Gulf Production Co.'s No. 20-A Spear, top sand 3,535 feet, initial production 60 bbls. per hour through open tubing, total depth 3,561 feet. J. B. Hughes' No. 2-A A. A. King, top sand 3,723 feet, initial production 60 bbls. per hour through one-half inch tubing choke, total depth 3,729 feet. Island Oil Co.'s No. 6 Register, top sand 3,626 feet, initial production 80 bbls. per hour through open tubing, total depth 3,638 feet. Magnolia Petroleum Co.'s No. 25 Radford, top sand 3,648 feet, initial production 96 bbls. per hour through open tubing, total depth 3,650 feet.

North Gregg County

Amada's No. 6 Magrill, top sand 3,657 feet, initial production 50 bbls. in 40 minutes through open tubing, total depth 3,706 feet. W. B. Ambrose's No. 8 N. Jones, top sand 3,538 feet, initial production 100 bbls. in 45 minutes, total depth 3,608 feet. C. & G. Oil Co.'s No. 2 Magrill, top sand 3,652 feet, initial production 81 bbls. in 20 minutes through open tubing, total depth 3,675 feet. Cooper and McDavid's No. 1 Joe Bander, top sand 3,546 feet, initial production 65 bbls. in one-half hour through open tubing, total depth 3,581 feet. Empire Gas & Fuel Co.'s No. 15 L. A. Jeter, top sand 3,532 feet, initial production 28 bbls. in one-quarter hour through open tubing, total depth 3,572 feet. Fain and McGaha's No. 13 A. Tooke, top sand 3,610 feet, initial production 30 bbls. in one-half hour through open tubing, total depth 3,663 feet. General Crude Oil Co.'s No. 12 F. T. Rembert, top sand 3,461 feet, initial production 21 bbls. in one-quarter hour through open tubing, total depth 3,484 feet. Gulf Production Co.'s No. 18 F. C. Fishburn, top sand 3,487 feet, initial production 73 bbls. per hour through open tubing, total depth 3,515 feet. Hammond and Branson's No. 2 Fuller, top sand 3,696 feet, initial production 30 bbls. in one-half hour through open tubing, total depth 3,733 feet.

Humble Oil & Refining Co.'s No. 18 T. M. Armstrong, top sand 3,579 feet, initial production 91 bbls. per hour through open tubing, total depth 3,601 feet; No. 9 E. W. Clements, top sand 3,555 feet, initial production 98 bbls. per hour through open tubing, total depth 3,559 feet; No. 9 W. C. Mackey, top sand 3,582 feet, initial production 47 bbls. per hour through open tubing, total depth 3,591 feet. Kewanee Oil & Gas Co.'s No. 17 fee, top sand 3,576 feet, initial production 30 bbls. in one-quarter hour through open tubing, total depth 3,617 feet. Lechner and Hubbard's No. 6 Tuttle, top sand 3,529 feet, initial production 50 bbls. in one-half hour through open tubing, total depth 3,559 feet. Magnolia Petroleum Co.'s No. 7 P. C. Castleberry, top sand 3,608 feet, initial production 124 bbls. per hour through open tubing, total depth 3,634 feet. Marine Oil Co.'s No. 6 W. H. York, top sand 3,512 feet, initial production 50 bbls. in 20 minutes through open tubing, total depth 3,525 feet.

Otto Massie's No. 3 M. A. Loughridge, top sand 3,694 feet, initial production 60 bbls. per hour through open tubing, total depth 3,704 feet. J. S. Rushing's No. 3 H. McNeeley, top sand 3,667 feet, initial production 125 bbls. per hour through open tubing, total depth 3,675 feet. Sun Oil Co.'s No. 13 J. R. Beall, top sand 3,576 feet, initial production 75 bbls. per hour through open tubing, total depth 3,591 feet. Tide Water Oil Co.'s No. 8 Joe Beall, top sand 3,647 feet, initial production 84 bbls. per hour through open tubing, total depth 3,654 feet.

North Rusk County

J. Berren's No. 6 A. Holt, top sand 3,650 feet, initial production 61 bbls. per hour through open tubing, total depth 3,710 feet. DeArman and McMillan's No. 4 Roberson, top sand 3,604 feet, initial production 50 bbls. per hour through open tubing, total depth 3,695 feet. Friedman and Swindler's No. 8 Mayfield Co., top sand 3,710 feet, initial production 100 bbls. per hour through open tubing, total depth 3,712 feet. Gulf Production Co.'s No. 10 W. S. Sexton, top sand 3,616 feet, initial production 38 bbls. per hour through open tubing, total depth 3,687 feet. Humble Oil & Refining Co.'s No. 123 L. D. Crim, top sand 3,655 feet, initial production 120 bbls. per hour through open tubing, total depth 3,681 feet; No. 27-A S. S. Laird, top sand 3,624 feet, initial production 55 bbls. per hour through open tubing, total depth 3,694 feet; No. 26 J. N. Peterson, top sand 3,620 feet, initial production 100 bbls. per hour through open tubing, total depth 3,640 feet. Stantex Oil Co.'s No. 3 L. Morse, top sand 3,583 feet, initial production 30 bbls. in one-half hour through three-quarters inch tubing choke, total depth 3,649 feet. Sam K. Vierson's No. 2-A Andy Givens, top sand 3,608 feet, initial production 120 bbls. per hour through open tubing, total depth 3,628 feet.

South Rusk County

Arkansas Fuel Oil Co.'s No. 7 J. Wheelis, top sand 3,639 feet, initial production 22 bbls. in one-quarter hour through open tubing, total depth 3,668 feet. Atlantic Oil Producing Co.'s No. 20 Ida L. Kinney, top sand 3,572 feet, initial production 20 bbls. per hour through open tubing, total depth 3,630 feet; No. 21 Kinney, top sand 3,574 feet, initial production 76 bbls. per hour through open tubing, total depth 3,635 feet; No. 5-D J. E. Strickland, top sand 3,643 feet, initial production 20 bbls. per hour through open tubing, total depth 3,670 feet; No. 6-D J. E. Strickland, top sand 3,634 feet, initial production 19 bbls. per hour through open tubing, total depth 3,672 feet. Darnell and others' No. 1 G. T. Moore, top sand 3,535 feet, initial production 20 bbls. in six hours' pumping, total depth 3,695 feet. Genecova and Roosth's No. 1 Pilgreen, top sand 3,795 feet, initial production 40 bbls. per hour through open tubing, total depth 3,800 feet.

Humble Oil & Refining Co.'s No. 3-B R. A. Barksdale, top sand 3,550 feet, initial production 75 bbls. through three-quarters inch tubing choke, total depth 3,606 feet; No. 33 A. D. Blackwell, top sand 3,636 feet, initial production 71 bbls. through eleven-sixteenths inch tubing choke, total depth 3,646 feet; No. 40-A M. and R. Kangerga, top sand 3,652 feet, initial production 60 bbls. through eleven-sixteenths inch tubing choke, total depth 3,696 feet; No. 42-A Kangerga, top sand 3,667 feet, initial production 72 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,712 feet; No. 6 L. R. Reed and others, top sand 3,659 feet, initial production 54 bbls. through eleven-sixteenths inch tubing choke, total depth 3,732 feet; No. 10-A Turner, top sand 3,717 feet, initial production 87 bbls. through eleven-sixteenths inch tubing choke, total depth 3,738 feet. Hunt Production Co.'s No. 6-A Smith-Wilson, top sand 3,765 feet, initial production 41 bbls. in one-quarter hour through open tubing, total depth 3,790 feet. Imperator Oil Co.'s No. 3 Cox, top sand 3,658 feet, initial production 40 bbls. per hour through open tubing, total depth 3,760 feet.

McMurray and Fair's No. 6 Fair, top sand 3,648 feet, initial production 125 bbls. per hour through open tubing, total depth 3,658 feet. Magnolia Petroleum Co.'s No. 3-B W. W. Holland, top sand 3,672 feet, initial production 5 bbls. in five minutes through 1-inch tubing choke, total depth 3,730 feet. Mid-Kansas Oil & Gas Co.'s No. 68 W. T. Grissom, top sand 3,679 feet, initial production 88 bbls. per hour through open tubing, total depth 3,682 feet. Miller Production Co.'s No. 2 Bradford, top sand 3,531 feet, initial production 25 bbls. in one-half hour through open tubing, total depth 3,640 feet; No. 6 D. Bradford, top sand 3,538 feet, initial production 40 bbls. in one-half hour through open tubing, total depth 3,630 feet. Octo Oil Co.'s No. 2-B E. B. Alford, top sand 3,613 feet, initial production 93 bbls. in 80 minutes through open tubing, total depth 3,701 feet. Olsen Brothers and Johnson's No. 11 J. S. Powers, top sand 3,668 feet, initial production 55 bbls. in 20 minutes through open tubing, total depth 3,674 feet.

Sells Petroleum Co.'s No. 2 Giles, top sand 3,687 feet, initial production 75 bbls. per hour through open tubing, total depth 3,780 feet. Stanolind Oil & Gas Co.'s No. 10 Mason, top sand 3,601 feet, initial production 15 bbls. in one-quarter hour through open tubing, total depth 3,616 feet; No. 8 M. O. Quinn, top sand 3,798 feet, initial production 38 bbls. in one-half hour through open tubing, total depth 3,803 feet; No. 4 R. F. Russell, top sand 3,704 feet, initial production 44 bbls. in 35 minutes through open tubing, total depth 3,775 feet. Tide Water Oil Co.'s No. 9 J. Shaw, top sand 3,702 feet, initial production 15 bbls. in one-quarter hour through open tubing, total depth 3,745 feet. Tysco Oil Co.'s No. 2-A Frederick, top sand 3,550 feet, initial production 20 bbls. in four hours' pumping, total depth 3,634 feet. Veneable and McClanahan's No. 23 Birdwell, top sand 3,608 feet, initial production 80 bbls. in one-half hour through open tubing, total depth 3,636 feet.

Smith County

Arcadia Refining Co.'s No. 3 Wolford, top sand 3,743 feet, initial production 25 bbls. in one-quarter hour through eleven-sixteenths inch tubing choke, total depth 3,745 feet. Brogan Oil & Gas Co.'s No. 4 Wright, top sand 3,709 feet, initial production 65 bbls. per hour through open tubing, total depth 3,715 feet. Hunt Production Co.'s No. 11-B R. W. Fair, top sand 3,681 feet, initial production 38 bbls. in 11 minutes through open tubing, total depth 3,681 feet. Steward Holding Corp.'s No. 2 S. S. Cook, top sand 3,735 feet, initial production 80 bbls. per hour through open tubing, total depth 3,737 feet. Texarkana Oil Co.'s No. 3 T. O. Wright, top sand 3,680 feet, initial production 70 bbls. per hour through open tubing, total depth 3,684 feet. Weaver-Perry Oil Co.'s No. 7 T. O. Wright, top sand 3,706 feet, initial production 65 bbls. per hour through open tubing, total depth 3,710 feet.

Upshur County

Atlantic Oil & Producing Co.'s No. 13 Porter, top sand 3,674 feet, initial production 10 bbls. per hour through open tubing, total depth 3,680 feet. Cal-Pet Corp.'s No. 4 Taylor, top sand 3,690 feet, initial production 75 bbls. per hour through open tubing, total depth 3,701 feet. Clark and Cowden's No. 5-A Free, top sand 3,610 feet, initial production 100 bbls. per hour through open tubing, total depth 3,675 feet. Conservative Oil Co.'s No. 2 Mackey, top sand 3,730 feet, initial production 20 bbls. in 20 minutes through open tubing, total depth 3,737 feet. Humble Oil & Refining Co.'s No. 9 Phillips, top sand 3,635 feet, initial production 15 bbls. in one-quarter hour through open tubing, total depth 3,663 feet. Mudge Oil Co.'s No. 13-A Free, top sand 3,640 feet, initial production 80 bbls. per hour through open tubing, total depth 3,710 feet.

Cayuga Field, Anderson County

J. R. Meeker and others' No. 1 H. H. Duncan, top Pecan Gap 2,250 feet, base 2,447 feet, top Austin chalk 3,392 feet, base 3,758 feet, elevation 362 feet, dry and abandoned, A. Enis Survey. Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 2 Edens, top Pecan Gap 2,146 feet, base 2,490 feet, top Austin chalk 3,147 feet, base 3,582 feet, top first gas sand 3,860 feet, second gas sand 4,011

Harold G. Neely, president of the Iron Mountain Oil Co., Fort Worth, and Fern Hunter, production superintendent, Graham, Texas

feet, top oil sand 4,030 feet, initial production 165 bbls. in 24 hours, total depth 4,051 feet, Samuel Snider Survey.

WILCAT COMPLETIONS

Limestone County

C. C. Curtis and others' No. 1 Daniels, dry and abandoned, total depth 2,950 feet. Pedro Varella Survey.

Navarro County

R. B. Codding and others' No. 1 Lela Kelt, dry and abandoned, total depth 1,140 feet, C. B. Emmons Survey.

Van Field, Van Zandt County

Pure Oil Co.'s No. 11 A. R. Tunnell, initial production 136 bbls. in 24 hours, total depth 2,952 feet; No. 9 W. T. Jarman, top oil sand 2,786 feet, initial production 200 bbls. first 24 hours, total depth 2,943 feet; No. 7 J. A. Bracken, top sand 2,594 feet, initial production 136 bbls. first 24 hours, total depth 2,960 feet. Humble Oil & Refining Co.'s No. 2 S. R. Ray, top sand 1,190-1,224 feet, initial production 3 bbls. pumping per hour, total depth 1,244 feet.

West Texas Fields

(Continued from Page 40)

duction 771 bbls., total depth 2,843 feet. Tide Water Oil Co.'s No. 2 Scarborough, top pay 2,830-3,016 feet, initial production 65 bbls., total depth 3,016 feet.

COMPLETIONS IN NORTH TEXAS

Archer County

Rhea Anderson's No. 1 Barnett, dry and abandoned, total depth 1,438 feet. Bridwell Oil Co.'s No. 4-C Falls County, lime 1,093-96 feet, initial production 100 bbls., total depth 1,096 feet; No. 5-C Falls County, lime 1,099-1,100 feet, initial production 100 bbls., total depth 1,-100 feet, treated with acid. L. T. Burns' No. 3 Perkins, oil sand 1,597-1,603 feet, initial production 175 bbls., total depth 1,603 feet. No. 4 Perkins, oil sand 1601-09 feet, initial production 200 bbls., total depth 1,609 feet. Barney Cockburn's No. 1 Anderson, lime 1,366-78 feet, initial production 25 bbls., total depth 1,378 feet, treated with acid. Continental Oil Co.'s No. 9 Falls County, lime 1,099-1,116 feet, initial production 47 bbls. in 2 hours, total depth 1,116 feet, treated with acid. James N. Crofton's No. 1 Logan, lime 1,147-81 feet, initial production 75 bbls., total depth 1,161 feet, treated with acid. D. L. Edmeston's No. 2 Justice, oil sand 850-53 feet, initial production 80 bbls. in 12 hours, total depth 853 feet. J. E. Foster & Son's No. 1 Scott, dry and abandoned, total depth 1,292 feet. Golding & Cochran's No. 7 Green, dry and abandoned, total depth 1,116 feet; No. 4 Richardson, dry and abandoned, total depth 1,302 feet. W. B. Hamilton's No. 21 Coffield, lime 1,166-89 feet, initial production 140 bbls., total depth 1,189 feet; No. 15 Pace, lime 1,129-44 feet, initial production 30 bbls. of oil and 12 bbls. of water, total depth 1,144 feet, treated with acid; No. 16 Pace, lime 1,126-40 feet, initial production 30 bbls. of oil and 10 bbls. of water, total depth 1,140 feet, treated with acid.

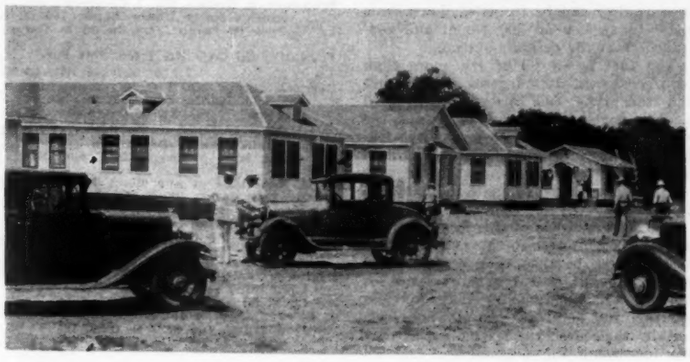
W. T. Knight's No. 1 fee, dry and abandoned, total depth 1,254 feet. W. E. Maxson, Jr.'s No. 22 Green, lime 1,086-98 feet, initial production 125 bbls., total depth 1,098 feet, treated with acid; No. 23 Green, lime 1,090-1,104 feet, initial production 100 bbls., total depth 1,104 feet, treated with acid. George L. Pace's No. 11 Green, lime 1,156-75 feet, initial production 300 bbls., total depth 1,175 feet, treated with acid. Perkins and Cullum's No. 11-C Falls County, lime 1,-168-83 feet, initial production 200 bbls., total depth 1,183 feet, treated with acid. Pois and Schultz' No. 25 Green, lime 1,-137-57 feet, initial production 200 bbls., total depth 1,157 feet, treated with acid. Shappell Oil Co.'s No. 1 Woods, dry and abandoned, total depth 1,520 feet. Simms Oil Co.'s No. 6 Nichols, oil sand 1,597-98 feet, initial production 25 bbls., total depth 1,598 feet. Staniforth and Ray's No. 7 Wilson, oil sand 1,597-99 feet, initial production 150 bbls., total depth 1,599 feet; No. 8 Wilson, oil sand 1,595-99 feet, initial production 10 bbls. per hour, total depth 1,599 feet; No. 9 Wilson, oil sand 1,597-1,602 feet, initial production 250 bbls., total depth 1,602 feet.

Jack County

Lynch and Whitener's No. 1 Craig, dry and abandoned, total depth 301 feet.

Montague County

Texas Co.'s No. 4-B Cunningham, oil sand 884-900 feet, initial production 25 bbls. of oil and 50 bbls. of water, total depth 1,907 feet. Reno Oil and Petroleum Producers companies' No. 10-C W. T. Waggoner, dry and abandoned, total depth 1,807 feet.



New Kilgore offices of the Texas Railroad Commission. E. N. Stanley, chief supervisor of the commission is in charge of all departments located in the new buildings which are about one mile south of the town

N. H. Martin & Son's No. 2 Bloodworth, sandy lime 280-306 feet, initial production 7 bbls., total depth 306 feet.

Wichita County

King Royalty Co.'s No. 1-H W. T. Waggoner, dry and abandoned, total depth 1,084 feet. Palmer and Burch, Inc.'s No. 1 Melton, lime 1,903-07 feet, initial production 75 bbls. of oil and 50 bbls. of water, total depth 1,907 feet. Reno Oil and Petroleum Producers companies' No. 10-C W. T. Waggoner, dry and abandoned, total depth 1,807 feet.

Montague County

Texas Co.'s No. 4-B Cunningham, oil sand 884-900 feet, initial production 25 bbls., total depth 900 feet; No. 5-B Cunningham, oil sand 891-917 feet, initial production 26 bbls., total depth 917 feet.

Wilbarger County

Consolidated Oil Co.'s No. 2-T W. T. Waggoner, oil sand 1,882-1,900 feet, initial production 55 bbls., total depth 1,-900 feet; No. 1-U W. T. Waggoner, dry and abandoned, total depth 1,947 feet. W. B. Hamilton's No. 5-L W. T. Waggoner, oil sand 1,290-94 feet, initial production 15 bbls., total depth 1,924 feet. J. B. Henderson's No. 1-A W. T. Waggoner, oil sand 1,879-81 feet, initial production 400 bbls., total depth 1,881 feet.

Young County

Bledsoe and Watson's No. 1 Watson, dry and abandoned, total depth 674 feet. Heydrick and Clower and Bryan's No. 1 Howard, dry and abandoned, total depth 890 feet.

COMPLETIONS IN PANHANDLE

Carson County

Skelly Oil Co.'s No. 28 Schafer, pay 3,040-55 feet, initial production 90 bbls., total depth 3,106 feet.

Gray County

C. Black's No. 1 Back, gas 2,170-2,300 feet, initial production 8,000,000 feet of gas, total depth 2,350 feet. Dixon Creek Oil & Refining Co.'s No. 4 Horner, shot 200 quarts 3,165-3,216 feet, initial production 405 bbls., total depth 3,221 feet. Phillips Petroleum Co.'s No. 1 Jackson, pay 3,260-68 feet, initial production 13 bbls., total depth 3,340 feet. Sinclair Prairie Oil Co.'s No. 7 Worley-Leycomb, pay 2,860-90 feet, initial production 870 bbls., total depth 2,952 feet. Texwell Oil Co.'s No. 1 Combs-Worley, pay 2,970-3,023 feet, increase at 3,094-3,148 feet, initial production, 10 bbls. of oil and salt water, total depth 3,148 feet.

Hutchinson County

Huber Petroleum Co.'s No. 1 W. S. Christian (old well drilled deeper) increase in pay 3,183-86 feet, initial production 52 bbls., total depth 3,186 feet. J. R. Phillips and others' No. 1 Lewis, pay 2,938-69 feet, initial production 212 bbls., shot 430 quarts, total depth 2,977 feet. H. Stekoll's No. 1 Whittenburg-Canadian, shot 160 quarts 2,902-3,042 feet, initial production 100 bbls., total depth 2,977 feet.

Wheeler County

Anderson & Kerr's No. 1 Hunter, total depth 2,315 feet, plugged back to 2,190 feet, shot 10 quarts 2,183-88 feet, initial production 85 bbls., total depth 2,315 feet. Dumar Oil Co.'s No. 1 Ftak, gas 1,892-1,903 feet, initial production 12,-000,000 feet of gas, total depth 1,903 feet. Humble Oil & Refining Co.'s No. 2 Koons, pay 2,280-95 feet, initial production 155 bbls., total depth 2,350 feet. King Royalty Co.'s No. 1 Tindall, total depth 2,308 feet, plugged back to 2,287 feet, pay 2,225-39 feet, initial production 10 bbls. Magee Oil & Gas Co.'s No. 1 Walker, pay 2,394-96 feet, iniial production 130 bbls., total depth 2,390 feet. Mid-Continent Petroleum Corp.'s No. 4 Carwile, pay 2,420-30 feet, initial production 242 bbls., total depth 2,360 feet. No. 5 Carwile, shot 80 quarts 2,298-2,330 feet, initial production 527 bbls., total depth 2,454 feet. Skelly Oil Co.'s No. 1 Derrick, pay 2,450-95 feet, initial production 495 bbls., total depth 2,495 feet. No. 1 Mary, dry and abandoned, total depth 2,254 feet.

Oil Provisions of the New Revenue Law Will Make Close Check on Hot Oil

The Revenue Act of 1934 provides, among other things, that a Federal tax of one-tenth of 1 cent shall be paid upon each barrel of 42 gallons produced in this country after June 9, except "that such tax shall not apply to crude petroleum produced from any well which is not capable of producing more than 5 bbls. per day."

Also that a tax of one-tenth of 1 cent per barrel of oil refined to be paid by the refiner or processor, and "on gasoline produced or recovered in the United States from natural gas" by the person producing or recovering such gasoline.

The act is effective on the thirtieth day after the date of its enactment May 10, 1934, 11:40 a.m., or at noon June 9.

This new tax has caused much discussion among buyers and refiners of crude oil because it is necessary for the purchasers to hold themselves safe on the payment of this tax to the Government as they pay the producer for the oil.

Most purchasers are therefore planning to hold the tax out of all payments upon all oil purchased regardless of the size of the well from which the oil was recovered until the producer has certified to them in a satisfactory manner that the well is not "capable of producing more than 5 bbls. per day." The burden of proof will rest with the producer.

At a meeting of producers, refiners and purchasers of crude oil held in Tulsa last week a telegram was addressed to Gen. Baird H. Markham, director of the American Petroleum Industry Committee, New York City, asking that he discuss with the Commissioner of Internal Revenue, who will administer this new act, the following points:

Request that the act be made effective as of 7 a.m., June 9, instead of at noon of June 9 to better conform with oil field regulations for production and refining.

Require that the burden of proof as to the status of the well's producing ability rest with the producer or well owner.

Change the wording of the act from "Not capable of producing more than 5 bbls. per day" to designate that the average per well per day production for the lease be taken as the basis upon which the well production will be taxed.

That one exemption certificate only be required and that the producer or well owner be not required to make certificate as to well's capacity each month along with the report upon production for the month.

This change is asked for because it is a well established fact that there are thousands of small wells that have a fixed rate of production below 5 bbls. per day and to be required to certify to this fact each month would only complicate matters and build up a great mass of unnecessary data in the files of the oil companies and the tax offices.

That before these details and others pertaining to the act were finally passed upon a conference be held between the Commissioner of Internal Revenue, and a committee representing the purchasers, producers and refiners of crude oil.

Royalty owners will be affected by this new law for the tax is to be paid by anyone having interest in the oil.

While there are a number of features of the law that will impose a burden upon the industry it is also felt that the strict enforcement of it will curb the production and refining of "hot oil" because there is a penalty of $1,000 fine or six months in jail or both upon conviction of any person willfully failing to comply with any such requirements as set forth in the act.

The producers, purchasers and refiners will at first make full deductions from all oil handled because it is not thought that full interpretations of the act will be handed down before the first payment of tax is due July 9. Payments so held and the tax not paid to the Government will later be returned to the proper parties having original claim.

YOUNG OIL MAN MARRIES

HOUSTON, Tex., June 16.—A marriage of statewide interest took place Thursday morning in Sacred Heart church of Palestine, when Miss Margaret Ezell Copeland, daughter of James E. Copeland of that city, became the bride of Francis Joseph Donoghue, son of Mr. and Mrs. T. J. Donoghue of Houston. Father John J. Kearns was the celebrant, assisted by Father James Thomas Fleming of Port Arthur.

Going over from Houston for the wedding were Mr. and Mrs. T. J. Donoghue, Miss Mary Catherine Donoghue, Mr. and Mrs. Gerald Donoghue, Mr. and Mrs. Ambrose Donoghue, Vincent Donoghue, Mr. and Mrs. T. E. Duggan, Mr. and Mrs. T. J. McMahan, Mr. and Mrs. George Noble, Mr. and Mrs. Ira McFarland, Mr. and Mrs. Henry Schuhmacher, Mrs. A. W. McAllister and son, Alex, Jr.

The bridegroom, whose father is vice president of The Texas Co., is a scout in the East Texas Field for that company.

Diesel Engine Powered Passenger Trains and Automobiles Coming Into Use

By L. G. E. BIGNELL
Petroleum Engineering Editor

For many years the gas and gasoline engines have been used extensively in the oil fields for various power purposes and will still continue to be used for many years to come, but there has been gradually introduced into the field of power units the Diesel type engine that is made in many styles and in a wide range of sizes. The term oil engine as generally used applies to the type of internal-combustion engines that burn directly in the cylinder heavy liquid fuels of high boiling points, the fuel being injected into the compressed air shortly before or at the completion of the compression stroke. The distinguishing features of oil engines are that the fuel vapor is not absorbed by air before it is admitted to the cylinder, and that no inflammable mixture of vapor and air is compressed preceding its ignition.

Oil engines compress air alone, and the heat of compression is used to ignite the fuel, which burns by consuming the oxygen of the air in the cylinder, the engine transforming the heat energy into work. To facilitate and accelerate the burning of a liquid fuel it must either be vaporized, atomized or intimately mixed with air immediately preceding its ignition.

Engines of this class are made in four and two-cycle motors and in sizes ranging from 40 to several thousand horsepower. In the Cummins Diesel engines the fuel is metered into the cylinders and mixed with the air before being injected into the combustion chambers through nozzles which break it up and finely atomize and gasify it. This hot and gaseous fuel is applied to the incandescent air to cause combustion. The air is drawn into the cylinder in a maximum charge and compressed to 500 pounds, the friction of compression raising the temperature to about 1,000° F.

In the Cummins engine the fuel is metered by the use of a single plunger, the stroke of which is controlled by a foot throttle on the automobile type engines, and the use of a distributor. In this way every cylinder gets exactly the same charge of fuel, regardless of the plunger or wear of the mechanism. This assists in keeping the engine balanced, and insures a smooth, even flow of power.

Two Cummins Diesel powered automobiles were entered in the recent speedway contest at Indianapolis, one of the four and the other of the two-cycle type. The two-cycle engine powered car finished twelfth and made an average speed of about 88 m.p.h.

Uses in the Petroleum Industry

The Cummins Diesel engines are so designed and manufactured as to permit of their use for many purposes in the oil fields and other branches of the petroleum industry. They are made in sizes rated at from 40 to 600 horsepower, and can be mounted upon any type truck or tractor either for automotive or other duties. Eight companies in the Pacific Coast area use Cummins Diesel engines for power on gasoline trucks for bulk distribution and are giving excellent performances.

The same company makes 200 horsepower four-cycle engines that can be used for power units on rotary outfits and these units have one distinct advantage in that they can be throttled down from 1,200 to as low as 200 r.p.m. and controlled from the driller's station.

The fuel is an oil of not more than 34 viscosity at 100 degrees temperature and this type fuel also lubricates all moving parts of the engine except the crank. There are many other novel features built into the Cummins Diesel which has been on the market for over 14 years and is being used in many industries.

The increased use of this type of prime mover is of interest to the petroleum industry, first because they offer an excellent type of unit for many kinds of work within the industry that produces the fuel the engines consume; and second, by their use in other industries they are increasing the demand for fuel oil that is benefiting the petroleum industry.

The recent performance of the Burlington Route's Diesel powered three coach train in a nonstop run from Denver, Colo., to Chicago in 13 hours and 5 minutes at the average speed of 77.5 miles per hour for the total distance of 1,015 miles has attracted nation-wide attention to this type of train.

Railroad executives and engineers have long been informed as to the advantages of this kind of power and the Cummins Engine Co. of Columbus, Ind., reports that it now has orders for 48 180-horsepower Cummins Diesel units direct connected to 100-K.W. direct-current generators from the Burlington Route. Two of these motors will be used in each of 24 switch locomotives, and in addition to this order the company is building two 18-cylinder 750-horsepower engines for passenger service. These motors are direct connected to direct-current generators also, and they are designed for use in three car articulated trains of the same general type as the one which recently made the record run from Denver to Chicago except that the larger motors are installed under guarantee to give the train a sustained speed of 120 m.p.h.

All of the other leading railroads in this country are alive to the possibilities of Diesel engines for all kinds of motive power and orders have been placed with the leading manufacturers of Diesels for motor units for these uses. The increased use of this type of internal combustion motor will be of interest to the petroleum industry because it means increased demands for fuel oil and lubricants, both of high quality and offering opportunities of extensively expanding the use of crude oil. This expansion differs from the burning of oil in the fire boxes of locomotives because refined products are most economical for fuel for the Diesel type engines.

INTERNATIONAL CRUDE OUTPUT

TORONTO, Ontario, June 18.—For the first four months of 1934 the total crude oil output of the International Petroleum Co. from its fields in Peru and Colombia amounted to 8,681,128 bbls., or at the rate of 25,443,858 bbls. a year, compared with an actual output of 24,363,003 bbls. in 1933, and 24,052,806 bbls. in 1932.

Wildcat Operations in Southwest Texas

(Continued from Page 39)

Berry-Hays et al's No. 1 City, 450 ft. N line and 750 ft. E line of 175-ac. tract ..... Drlg. 495 ft.
A. M. Blume's No. 1 H. A. Ridder, E offset to Blume's No. 2 Ridder, J. M. Barrera Sur. ..... Derrick blew down.
A. M. Blume's No. 2 Louis Ridder, approximately 1,350 ft. N of R.R., 700 ft. E of W line of J. M. Baarera Sur. No. 58 ..... T.D. 1,630 ft.; P.B. to test 1,430 ft.; W.O.C.
J. G. Bowles' No. 1 Dillon, 750 ft. from road on E and 4,750 ft. from S line of survey, Manuel Delund Sur. .. T.D. 237 ft.; W.O.C.
Dingman & Russell's No. 1 R. J. Coffey, 1,338 ft. from SE line, 1,986 ft. from SW line of 426-acre tract in Rodrigues Sur. ..... T.D. 1,326 ft.; P.B. 1,017 ft.; S.D.
Keiffer et al's No. 1 Ruiz, SE cor. of 32-ac. tract in F. Rowland Sur. No. 45 ..... T.D. 1,715 ft.; S.D.
S. E. Gantt's No. 1 A. B. Stephen, 2,650 ft. from SW line, 740 ft. from SE line of P. W. Hays Sur. .... T.D. 452 ft.; S.D.
Thos. Gorton's No. 1 Edward Jackel, 600 ft. from N line, 800 ft. from E line of tract in J. Ward Sur. .. T.D. 500 ft.; S.D.
George L. O'Neill's No. 1 Neimann in Juan Montez Sur. No. 6 ..... T.D. 1,425 ft.; bailing.
J. W. Johnson's No. 1 Willow Springs, 150 ft. from N and W lines of lease in B. Munos Sur. No. 151..... T.D. 1,940 ft.; S.D.; made salt wtr. and some oil.
Fred A. Perrenot's No. 1 Russell, 750 varas from NE line, 54 varas from NW line of 500-ac. tract in Rodrigues Sur. ..... T.D. 1,315 ft.; standing.
Schneider & Reese's No. 1 Claussen ..... S.D. 1,675 ft.
C. A. Smith's No. 1 Henry Lamb, 750 ft. from N and E lines of Lamb farm, in de la Garza grant ..... T.D. 982 ft.; show of oil and gas from 968-82 ft.; W.O.C.
Trawalter Oil Co.'s No. 2 fee, Jett Sur. ..... T.D. 1,660 ft.; S.D.

BURLESON COUNTY

Berry & Hayes' No. 1 C. W. Young, 150 ft. from SW line and 780 ft. from SE line of 140-ac. tract in Bird Sur (7 mi. SE of Caldwell) .. .. T.D. 1,950 ft.; abd.

CALDWELL COUNTY

S. S. Cargill's No. 2 Dameresu, 150 ft. from W line, 450 ft. from N line of D. Cooper Sur. ..... Top Edwards 2,260 ft.; show oil; reaming 2,262 ft.
F. H. Etheridge et al's No. 1 Perry, 300 ft. from SE line and 300 ft. from NE line of 27-ac. lease in P. Martinez Sur. (N of Lytton Springs) ..... Rigging up and S.D.
Wilford Keen et al's No. 1 Wm. Ewalk, 150 ft. from E line and 150 ft. from N line of 126-ac. tract, or 2,650 ft. from N and 1,300 ft. from E lines of Jas. George Sur. (3½ mi from Lockhart) ..... T.D. 2,228 ft.; S.D.
Hinton & Dodson's No. 1 Addie Smith, 750 ft. SW line, 1,750 ft. NW line of Sam Shupe Sur., 6 miles S of Lockhart ..... Top chalk 2,564 ft.; drlg. 2,586 ft.
J. Edward Mills et al's No. 1 Emma Johnson, 1,650 ft. from N line and 4,250 ft. from W line of Jas. Pinchback Sur. (6 mi. SE of Lockhart) ..... Sand 2,111 ft.; slight show oil; treated with 1,000 gals. acid.
M. C. Moore's No. 1 Lackey, 440 ft. NW line, 150 ft. NE line of Lackey's 193.75-ac. tract, or 450 ft. NW line and 2,600 ft. NE line of Damon Sur. ..... Drlg. 120 ft.
Morgan & Seagraves' No. 1 Blackwell, 862 ft. from creek on E line and 150 ft. S of Blackwell's 90-ac. tract in J. D. Rains Sur. ..... Drlg. 2,194 ft.

DEWITT COUNTY

Keystone Royalties' No. 1 L. T. Burns, 1,100 ft. from W and 600 ft. from S line of 303-ac. tract in L. G. Belcher Sur. ..... Drlg. shale 467 ft.
Slick-Urschel No. 4 Potter, 3,170 ft. from SE line of 591-acre tract, 990 ft. SE of No. 3 ..... S.D. 4,215 ft.

DUVAL COUNTY

Beer & Lewis' No. 1 Peters, Sur. 27 ..... Spud.
Buffalo-Texas Drlg. Synd., Inc.'s No. 1 Escobar, 700 varas from W line, 1,000 varas from N line of 930-ac. tract in Francisco grant ..... T.D. 2,865 ft. and S.D.
Dr. J. H. Butte et al's No. 1 Tom Graham, 1,122 ft. N line, 3,375 ft. W line, Sec. 572, E. line of county and N line of San Diego ..... Location.
Continental Oil Co.'s No. 3-A Clara, Driscoll Sevier, 2,675 ft. S and 1,000 ft. from E line of Sec. 448 ..... Moving in rig.
Cox & Hamon's No. 1 State ..... Drlg. 400 ft.
K. F. Hassellmann's No. 1 Mooty, 330 ft. N and W lines of S½ SW of Sur. 60 ..... Rigging up.
W. C. McBride's No. 1 Hagist, 330 from N and E lines of SE 80 ac. of Sec. 1 ..... Location.
J. R. B. Moore's No. 1 W. R. Peters, Survey 36..... Drlg. 800 ft.
G. G. Mortimer's No. 1-B Peters, 330 ft. N and W lines of SW¼ of Sur. 196 ..... T.D. 2,453 ft.; D.S. test 2,433-47 ft.; in 20 min. showed 60 ft. mud with show oil.
O'Byrne & Jennings' No. 1 Benavides, 3,734 ft. from S cor. and 330 ft. from W line at right angles, Sur. 355. Rigging up.
Sun Oil Co.'s No. 1 Moreno, 330 ft. from E line and 2,000 ft. from S line of NW cor. of H.&W. Sur. 537, in Sec. 540 (5 mi. S of San Diego) ..... Drlg. 4,900 ft.
Witherspoon et al's No. 1, Richardson Sur. No. 5 ..... T.D. 1,005 ft.; S.D.
Louis Yeager's No. 1 Yeager, 694 ft. from W line, 1,527 ft. from S line of Sur. No. 38 ..... T.D. 365 ft.; S.D.

EDWARDS COUNTY

Love and Evans' No. 1 Steve Brown, 660 ft. from N and E lines of Sec. 66, G.W.T.&P.R.R. Sur., 15 miles W of Rock Springs ..... S.D. 3,002 ft.; T.A.

FRIO COUNTY

Amerada Pet. Co.'s No. 2 Halff & Oppenheimer, begin. at most easterly N cor. of John H. Gibson Sur. No. 16, thence SE along NE line of Sur. 2,100 ft., thence SW at right angles 500 ft. (4 mi. SW of Pearsall) . Drlg. 5,900 ft.

GILLESPIE COUNTY

Dorre et al's No. 3 Lindig ..... Drlg. shale 263 ft.
Powers et al's No. 3 Lindig, 12,700 ft. from S line, 1,333 ft. from W line of Maria Josephine Guerrera Sur. ..... Location

GOLIAD COUNTY

Duval Oil Corp.'s No. 1 Lucy Borden, 330 ft. NE cor. of 124-ac. tract in Alberto Guiterez Sur., 1½ miles W of Charco ..... Location.
Jane Oil Co.'s No. 2 Grady Smith, 990 ft. SW lines of B.&B. Sur., 330 ft. SE line of Magnolia's 504-ac. tract ..... Rigging up.
Jim Kendricks & J. M. OByrne et al's No. 1 Runge State Bank, 330 ft. from NW line and 330 ft. from SW line of 142-acre tract .. .. Rigging up and drlg. wtr. well.
H. H. Weinert's No. 2 Gracy Smith, 660 ft. NE of No. 1, B.&B. Sur. ..... Rigging up.
Magnolia Pet. Co.'s No. 3 Porter, 660 ft. NW of Weinert's No. 1 Grady Smith ..... T.D. 3,649 ft.; set csg. without making D.S. test; W.O.C.
Oceanic Pet. Co.'s No. 1 Fromme, 1,500 ft. S line, 1,200 ft. W line of 62-ac. tract in P. D. Dexter Sur., 10 miles N of Goliad ..... Derrick.
Slick-Urschell's No. 4 Poetter, 330 ft. from SE line and 2,170 SW line of Marshall Sur. ..... Coring shale 4,237 ft.
Sun Oil Co.'s No. 1 Scarborough, 660 ft. SW of Weinert's No. 1 Smith ..... Set surface csg.

GONZALES COUNTY

Weinert et al's No. 1 Aug. Kallis, in Aug. Kallis' 150-ac. tract, just over Guadalupe County line in Gonzales County, 2,450 ft. N of river and in center of tract in Ira Mash Sur. ..... Location.

GUADALUPE COUNTY

Diamond Half Oil Co.'s No. 1 H. A. Bail, 3,000 ft. NE line and 3,500 ft. SE line of L. H. Peters Sur., 8 miles SW of Pequin ..... Location.
M. W. Eiser's No. 2 Wells, 1,700 ft. from S line, 200 ft. from W line of Blk. 3, Subd. 1, J. de la Baume Sur. ..... Location abd.

HAYS COUNTY

J. C. Crowder's No. 1 Burnett, 2,370 ft. from E line, 1,400 ft. from N line of tract in J. Ingram Sur. T.D. 430 ft.; set csg.; S.D.; abd.

HIDALGO COUNTY

D. D. Oil Co.'s No. 1 Mrs. L. George, 330 ft. from N and W lines of 40-ac. tract in Share 13, Porcion 41 Location.
Davis & Harrison's No. 1 Lula George, 300 ft. from S and 700 ft. from E lines of Tract 13, Porcion 41, Ancient Jurisdiction of Reynosa ..... Drlg. 3,260 ft.
Rogers et al's No. 1 Fairbanks, 7 miles S of McAllen.... Spud.
Otto Woods' No. 1 John Lawrence, 530 ft. from W, 300 ft. from N line of Tract 374, Porcion 39, Ancient Jurisdiction of Reynosa ..... Drlg. 2,000 ft.

Union Sulphur Co.'s No. 1 American Rio Grande L. & L. Co., 400 ft. S and W of NE cor. of Lot 239, Blk. 59 (¼ mi. N of Mercedes) ..Drlg. 5,980 ft.

JIM HOGG COUNTY

Sun Oil Co.'s No. 1-E Guerra & Son, 9,500 ft. N of county line along the E line of W 2,000-ac. tract and 660 ft. at R/A ..Drlg. 2,430 ft.

JIM WELLS COUNTY

Plymouth Oil Co.'s No. 1 Cuero Cattle Co., 330 ft. from S and W lines of H.T.&B. Sur. No. 7, 2¼ miles W from Alfred ..**Rigging up.**

Putnam and Bede's No. 1 McCarley, 600 ft. from SE line and 1,500 ft. from NE line of 300-ac. tract, Blk. A, of W. H. Bede Subdivision of Wallace D. Wade Ranch ..Drlg. shale 4,130 ft.

KARNES COUNTY

R. E. Cexeaux et al's No. 1 Tom Campbell, 330 ft. S and E cor. of farm and survey, J. R. Backer Sur., 12½ miles SW of Falls City ..Moving in rig.

Houston Oil Co.'s No. 1-A Niehaus, N offset to No. 1 Niehaus ..T.D. 420 ft.; W.O.C.

Houston Oil Co.'s No. 2-B Niehaus, 893 ft. from E line and 260 ft. from N line of lease ..Location.

Otto Krouse et al's No. 1 Marge Ruckman, 120 ft. from W line, 500 ft. from N line of 642-acre tract in Musquez Sur., 7½ miles N and E of Kennedy ..T.D. 3,262 ft.; abd.

F. Lovering et al's No. 1 P. Goff, 2¾ miles NE of Kennedy in C. Martinez Sur. ..Coring 2,650 ft.

G. A. Ray's No. 2 Radford, 4 miles N of Pettus Field..Drlg. 2,100 ft.

C. J. Webster's No. 1 J. B. Cannon, 1,140 ft. from A line, 250 ft. from E line of 80-ac. tract in Lambrano Sur. ..**T.D. 1,790 ft.; standing; will deepen to Yegua.**

Martin's No. 1 Houston, Thomas Leople Sur. No. 761 ....**Top black shale 1,928 ft., T.D. 1,985 ft.; to deepen.**

A. P. Pierce's No. 1 Werner, in SW cor. of 40-ac. tract, 150 ft. from S and W lines of J. F. Torrey Sur. ... T.D. 992 ft.; abd.

KENDALL COUNTY

Pierce & Garvey's No. 2 D. Werner, 1,140 ft. E, 420 ft. S line of J. F. Perry Sur., 6½ miles N of Kendalia ..Location.

KERR COUNTY

Edminston & Walker's No. 1 Whitworth, 1,160 ft. from S line and 1,333 ft. from E line of Sec. 1,439 of the H.E.&W.T. Sur. ..Drlg. 160 ft.; no report.

Jeff Love and Eastland Oil Co.'s No. 5-E Jeff Love, 1,500 ft. SE of No. 1 and 1,580 ft. from SE cor. and 300 ft. from N line of Sec. 1,591 ..T.D. 875 ft.; S.D.

G. F. Schreiner's No. 3 Love, 1,420 ft. from W line, 1,340 ft. from S line of Sur. No. 1,594 ..**Location.**

KLEBERG COUNTY

J. S. Brown's No. 1 Antone Dietz, Sec. 7, Hotch estate ..T.D. 2,845 ft.; S.D.

Harry Clark's No. 1 V. J. Kivlin, 360 ft. from E line, 400 ft. from S line of Sec. 39, Blk. 8, Kleberg Town & Improvement Co. Sur. ..T.D. 2,350 ft.; D.S. test 2,315-19 ft.; four joints mud, oil and sand; S.D.

LEE COUNTY

Jas. B. Pederson's No. 1 Turner, David Hudson Sur. ....T.D. 2,700 ft.; W.O.C.

H. A. Sherlack's No. 1 Otto, 736 ft. from NW line, 1,310 ft. from NE line of 57.5-ac. tract in Thomas Morrow Sur. ..T.D. 1,495 ft.; S.D.

LIVE OAK COUNTY

Holmes & Goodwin's No. 1 fee, 1,000 ft. from N line and 330 ft. from W line of 326-ac. tract in Brigada Haughty Sur. ..T.D. 902 ft.; blew out wtr. and gas.

Houston Oil Co.'s No. 25 Cartwright, J. Sandman Sur. ...Drlg. shale 1,510 ft.

Parsons & Smith's No. 1 Gomillion, 1,660 ft. W line, 160 ft. N line of tract No. 21, on N line and S line of survey, E. Jordan and I. D. Ammons Sur. ..Drlg. shale 751 ft.; no report.

Witherspoon Oil Co.'s No. 2 H. Clements, 100 ft. S of No. 1 junked hole, Ellz. Jordan Sur. ..Cemented 7-in. csg. at 515 ft.; W.O.C.

Ike Taylor's No. 2 Griffith, 1,200 ft. from E line and 1,151 ft. from S line of lease in Tract 5, D. Osborne Sur. ..**Rigging up.**

MAVERICK COUNTY

Stroman & Wright's No. 2 Debona, 440 varas E line, 280 varas S line of Sur. No. 1 ..Drlg. 420 ft.

Ollie Wright's No. 1 L. Little, 500 ft. from N line, 3,500 ft. from E line of Potter Sur. No. 65 (10 mi. N of Eagle Pass) ..T.D. 602 ft.; S.D.

McMULLEN COUNTY

Buford & Golightly's No. 1 Masuer, 760 ft. N line and 840 ft. E line of Sec. 22, H.T.&B. Sur., 5 miles W of Wentz ..Drlg. shale 1,500 ft.

Gleason et al's No. 1 Miles, Chas. Stephens Sur. ..Location.

Hall & Howard's No. 2 Lark, Scrugham Sur. ..T.D. 1,052 ft.; S.D.

Helvetie Oil Co.'s No. 1 W. E. Teal, 2,000 ft. N of Frio River and 2,136 ft. W line of survey, 3,000 ft. N 57 deg. W of Producers Oil Co.'s dry hole in M. Castillo Sur. No. 7 ..Drlg. shale 1,002 ft.

Jane Oil Co.'s No. 2 Lark, 1,320 ft. N line of Survey and 150 ft. E of No. 1 in Seeligham Sur... ..T.D. 1,066 ft.; testing.

Lefevre & Spice's No. 2 Hagist, 2,034 ft. due W of the Lefevre & Spice No. 1 Hagist, Sec. 17 ..T.D. 2,256 ft.; abd.

Don Long's No. 1 Nueces Land & Livestock Co., Sec. 111 ..Location.

H. D. Sheldon's No. 1 Jacob, 2,900 ft. NE line, 1,000 ft. NW line of W. B. Benham Sur. No. 9 ..Rigging up.

C. C. Shumway's No. 6 Shiner, 2,310 ft. from N line and 330 ft. from E line of NE¼ of Section 62 of the Shumway Subdivision of the Shiner Ranch ...Drlg. 1,480 ft.

Texlo Oil Co.'s No. 3 Jacobs, 5,293 ft. NE line and 330 ft. SE line of Benham Sur. ..T.D. 916 ft.; C.O.

MEDINA COUNTY

Scoggins & Sanders' No. 1 L. W. Burell, 150 ft. from E line, 1,750 ft. from N line of M. E. Gage Sur 395..T.D. 1,140 ft.; S.D.

MENARD COUNTY

Duffey-Chedster's No. 1 Mears Wilkinson, 660 ft. S line and 660 ft. W line of T.&N.O. Sur., Sec. 23, Abstract 756 ..**Rigging up.**

NUECES COUNTY

Benedum & Trees' No. 1 Bickham, 3,050 ft. NE line, 375 ft. SE line of 200-ac. tract in Farras Sur. ..Coring 5,550 ft.

Clymore Prod., Inc.'s No. 4-A Ingram, 660 ft. S and E lines of Lot 5, Sec. 6, Peters Subd. No. 2 ..Set 10-in. at 650 ft.; W.O.C.

Clymore Prod., Inc.'s No. 1-B J. C. Ingram, 500 ft. N line, 660 ft. E line of Lot 4, Sec. 9, Peters Subd. No. 2 ..Drlg. 3,300 ft.

Clymore Prod., Inc.'s No. 1-D J. C. Ingram, 660 ft. N line, 660 ft. E line of Lot 7, Sec. 6, Peters Subd. No. 2 ..Drlg. 2,480 ft.

Diadem Oil Co.'s No. 1 J. C. Mayo, 1,000 ft. along line from SE cor. in NW direction, thence due N 300 ft. (near Robstown), Sec. 23 ..Drlg. 5,500 ft.

Texas Seaboard's No. 1 Chapman, 1,320 ft. N and E lines of Sec. 40, 12m lles SW of Corpus Christi.....Drlg. 2,813 ft.

REAL COUNTY

H. J. Heartwell et al's No. 2 L. J. Haby, 694 ft. from W line and 2,153 ft. from S line of A.B.&M. Sur. No. 175 ..Drlg. 2,050 ft.; no report.

SAN PATRICIO COUNTY

Atkins-O'Neil and Continental's No. 2 Welder, 466 ft. from S and E lines of lease, Blk. 2, two locations S of Circle W Oil Co.'s No. 1 Welder ..Moving in rig.

Bunte et al's No. 1 C. C. Smith, start at NE cor. of F. Miller tract, go E 2,358 ft., thence S at right angles 819 ft., A. Armstrong Sur. (3 mi. SW of Odom) ..Drlg. 5,900 ft.

Carpenter et al's No. 1 Sadler, 300 ft. each way out of SE cor. Blk. 1, Sec. 32, T. Peres Sur. ..Drlg. shale 3,650 ft.

Heep Oil Co.'s No. 1 R. H. Welder, 300 ft. from N line, 467 ft. from W line of Welder 5.46-ac. tract....Derrick.

Jane Oil Co.'s No. 1 Ragsdale Bros., Sec. 58, Geo. H. Paul Subd. ..Location.

Josey Oil Co.'s No. 1 Welder, 1,500 ft. NW or Atkins & O'Neil and Continental Oil Co.'s No. 1 discovery well ..Drlg. 5,800 ft.

J. C. Means' No. 1 C. C. Smith, 990 ft. from N line, 330 ft. from W line of survey, J. W. Pays Sur., 1¼ miles NE of Angelita ..Location.

Petrol Corp.'s No. 1 R. H. Welder, 467 ft. from S and E lines of 300-ac. tract ..Rigging up.

Plymouth Oil Co.'s No. 1-B Welder, 3,500 ft. NW of No. 1-A ..Spud.

Plymouth Oil Co.'s No. 2-A Wilder, 1,320 ft. due E of No. 1-A ..Coring 3,950 ft.

STARR COUNTY

Chas. H. Andrews et al's No. 1 A. Guerra, San Jose grant, 330 ft. from N and 150 ft. from E line of Sec. 6 (NE part of county) ..T.D. 310 ft.; S.D.

B. & B. Oil Co.'s No. 2 Kelsey Bass, 330 ft. from W and S lines of Blk. 12 of Subd. of Porcions 86 and 87, jurisdiction Camargo ..**Rigged up and S.D.**

J. B. Buell's No. 1 V. C. Guerra, 330 ft. from NE line and 425 ft. from SE line of Sur. 10 ..Set surface csg.

Jim Clouc, Inc.'s No. 1 J. Rodriquez, Share 35, Porcion 88, ancient jurisdiction of Camargo ..Spud and S.D.

Cooper & Andrews' No. 1 J. M. Martinez, SW cor. of Sec. 135 ..Old well, to deepen; T.D. 3,200 ft.

Danvers & Harrison's No. 1 M. Guerra, 6,182 ft. NE line, 1,822 ft. NW line of Porcion 55 ..T.D. 1,784 ft.; abd.

Dean Bros. No. 1 M. M. Garcia, 4,100 ft. from S line, 4,600 ft. from W line of Sur. No. 916 ..T.D. 150 ft.; S.D.

Great Plains Oil Co.'s No. 1 Sanchez, 660 ft. from W line 330 ft. from S line of SE NW of Sur. No. 344 ..T.D. 3,905 ft.; S.D.

H. C. Harter's No. 1 Sanches et al, 530 ft. from N line and 450 ft. from W line of Share 72, Porcion 72..Location.

McDonald & Campbell's No. 1 C. C. Bowman, 330 ft. from N and W lines of Blk. 12 ..T.D. 3,500 ft.; prep. to abd.

McDonald's No. 1 E. A. Pfley, 2,600 ft. from S and W lines of Sur. 933 ..T.D. 2,507 ft.; S.D.

Merle Gundy's No. 1 Block, NW of Sur. 167 ..Spud and S.D.

Mitchell's No. 1 Kelsey-Bass, 150 ft. from N, 1,150 ft. from E lines of Share 5, Porcion 75, ancient jurisdiction of Camargo ..Location.

Smith-Tex. Oil Co.'s No. 1 Starr County Cattle Co., 150 ft. from NW cor. N½, Blk. 24, Porcion 89 ..Location.

Smith-Tex. Oil Co.'s No. 2 Starr County Cattle Co., 150 ft. out of NW cor. of E½ of Blk. 37, Porcion 89..Location.

Sun Oil Co.'s No. 6-C, V. C. deGuerra et al, 3,300 ft. from NW and 660 ft. from SW lines of Share 1, Saratoga grant, NW Starr County ..T.D. 2,212 ft.; straightening hole.

Weekly Oil Corp.'s No. 1 M. M. Garcia, 330 ft. from S, 330 ft. from W lines of Blk. 40, tract 1, in N end of Porcion 99, ancient jurisdiction of Camargo..T.D. 850 ft.; S.D.

TRAVIS COUNTY

Humble O. & R. Co.'s No. 1 P. C. Wells, 150 ft. NW line, 150 ft. NE line of farm, 185 ft. SW line and 1,000 ft. SE line of James P. Kemp Sur. ..Drlg. 755 ft.

UVALDE COUNTY

Evans & Johnson's No. 1 Farris, J Hammons Sur. ....T.D. 1,092 ft.; S.D.

Lon Evans' No. 1 Stone, 2,566 ft. from N line and 1,473 ft. from E line of survey, 8½ miles NE of Uvalde, Kent Sur. No. 652 ..Drlg. 150 ft.; no report.

Humble Oil & Ref. Co.'s No. 1 R. L. Anderson, 7,450 ft. SW of NE line and 9,100 ft. SE of NW line of J. J. Guerra Sur. (3 mi. NE of Uvalde) ..T.D. 2,098 ft.; fishing.

T. T. Word's No. 2 Trulove, 40 ft. N. 42 deg. E. of No. 1..T.D. 400 ft.; S.D.

WEBB COUNTY

Fidelity Exploration Co.'s No. 1 Soldivar, 1,300 ft. from E line, 2,600 ft. from N line of Sur. 657 ..Drlg. rock 300 ft.

French Oil Co.'s No. 7-A Benavides, 750 ft. W line, 1,700 ft. S line of Sur. No. 659 ..Coring 2,305 ft.

Gohlson's No. 1 Yeager, 330 ft. W line and 300 ft. S line of NW¼ of Sur. 346, NE part of county.....Location.

J. D. Manley's No. 1 S. Benavides, 347 ft. NW line, 313 ft. NE line of Blk. 318, Hill Subd. of M. Arispe grant ..Drlg. 450 ft.

Shankel et al's No. 1 Saldivar, Sur. 652 of J. V. Borrego grant ..R.U.

United Production Co.'s No. 1 Bruin, Block 43, Survey 8, Mariano Arispe Grant, E of Bruni City ..T.D. 3,417 ft.; comp. 34 bbls. dly.

Weekley Oil Corp.'s No. 1 R. Saldivor, 1,269 ft. from E line and 243 ft. from N line of Sec. 657, Borrego grant (SE part of county) ..T.D. 657 ft.; S.D.

WILSON COUNTY

A. P. George's No. 1 fee, 160 ft. from SE line and 300 ft. from SW line of 86.32-ac. tract in Canuto Diaz Sur. ..T.D. 976 ft.; S.D

Pfiel & Vogel's No. 1 Gutzeit, Flores grant, 150 ft. N of road and 150 ft. from W line of farm, 7 mi. NW of Floresville ..S.D. 809 ft.

WILLIAMSON COUNTY

McLean et al's No. 2 R. C. Miller, 800 ft. to S line, 100 ft. to W line of tract, B. Manlove Sur. ..T.D. 2,300 ft.; cleaning out.

ZAPATA COUNTY

J. W. Killam's No. 1 Bruni, 660 ft. SE line, 330 ft. SW line of Blk. 14, Sur. 13, 4 miles NW of Mirando Valley ..Rigging up.

R. B. Morrison's No. 1 Y. and R. Ramirez, 330 ft. from NE line and 330 ft. from SE line of Blk. 4, Share 20, Porcion 19 (5 mi. from Starr County line) ..T.D. 2,063 ft.; S.D.

H. V. & W. Oil Co.'s No. 1 Cuellar ..Set 8-in. csg. at 1,100 ft.; W.O.C.

Muckelroy's No. 1 Flores, on NE line and 75 ft. from SE line of Lot 2, Blk. 30, Muckelroy Subd. of Porcion No. 27 ..Derrick.

Robert Newton's No. 1 O. W. Killam, 150 ft. NW line, 150 ft. SW line, Sec. 186, Blk. 6 ..Drlg. 100 ft.

Joe Palmer's No. 11 S. Vela, 330 ft. from NE and SE lines of Blk. 170, Share 4 of L. Grillo grant, (3 mi. E of Redondo Pool) ..Moving in.

Southwest Texas Proven Areas

Week Ending June 16

NORTH DALE POOL—BASTROP COUNTY

Watt L. Saunders' No. 1 Harris, 1,100 ft. from SW line, 2,830 ft. from NW line of John Maximilian Sur. No. 22 ..Top Austin 2,149 ft.; T.D. 2,388 ft.; S.D.

NORTH PETTUS FIELD—BEE COUNTY

United Prod. Co.'s No. 45 Ray, 2,332 ft. SW of No. 13 and parallel with N line of tract, thence SE at right angles from N line of tract, W. J. Porter Sur. ..T.D. 4,350 ft.; showed salt water on D.S. test.

ECKERT POOL—BEXAR COUNTY

Alamo Nat. Gas Co.'s No. 2 Coreth, 300 ft. SE of Humble's No. 2 Coreth in A. Stafford Sur. ..T.D. 1,055 ft.; set 6⅝-in. csg.; S.D.

F. Harrison's No. 4 F. Gembler, 150 ft. from NW line, 460 ft. from NE line of 88-ac. tract in J. Montes Sur. ..T.D. 881 ft.; S.D.

J. Moore's No. 5 T. W. Masterson, 150 ft. from S line, 175 ft. from W line of 41-ac. tract in Miguel Gortario Sur. ..T.D. 736 ft.; 6⅝-in. csg.; S.D.

J. Moore's No. 4 T. W. Masterson, 150 ft. from S and W lines of tract in M. Cartari Sur. ..T.D. shale 695 ft.; S.D.

VON ORMY POOL—BEXAR COUNTY

Von Ormy Oil Co.'s No. 2 E. B. Carruth, 515 ft. from W line, 1,970 ft. from S line of 160-ac. tract out of 657-ac. tract in F. Rolen Sur. ..... T.D. 720 ft.; S.D.

EAGLE HILL POOL—DUVAL COUNTY

Shasta Oil Co.'s No. 3 J. R. Foster, 990 ft. from N line and 165 ft. from W line of 70-ac. tract in Sec. 206.. Moving in rig.

S.R.C. Corp.'s No. 1-C Foster, 2,317 ft. E line, 330 ft. S line of Sur. 270 ..... Drlg. 1,527 ft.; Cole sand 1,483-84 ft.; dry.

GOVERNMENT WELLS POOL—DUVAL COUNTY

Humble O. & R. Co.'s No. 25 Paul White, 990 ft. S line, 330 ft. E line of Sec. 249 ..... T.D. 2,292 ft.; comp. 15 bbls. hr.

Humble Oil & Refining Co.'s No. 26 Paul White, 990 ft. from N line and 2,310 ft. from E line of Survey in Section 249 ..... Moving in.

Luse & Cloyes' No. 1 Hagist, 330 ft. from N and W lines of Lot 13, Section 265 ..... T.D. 2,561 ft.; P.B. to 1,958 ft.; T. D. 2,168 ft.; 8-ft. sand; est. 50 bbls. fluid, 50 % salt water.

Magnolia Pet. Co.'s No. 1 Duval County Ranch, 330 ft. N line and E line of Sur. No. 58 ..... Drlg. 1,450 ft.

Magnolia Pet. Co.'s No. 4 Duval County Ranch, 330 ft. from N and E lines of SW¼ of Sur. No. 59 ..... Location.

Magnolia Pet. Co.'s No. 5 Duval County Ranch, 330 ft. from S and E lines of NE¼ of Sur. No. 59 ..... Location.

Magnolia Pet. Co.'s No. 6 Duval County Ranch, 330 ft. from N and E lines of SE¼ of Sur. No. 59 ..... Rigging up.

Magnolia Pet. Co.'s No. 3 Hahl Riley, 330 ft. from S line and 990 ft. from E line of N½ of NW¼ of Survey No. 45 ..... Location.

Reynosa Oil Co.'s No. 5-D Duval County Ranch, 990 ft. from S line, 330 ft. from E line of S½ SW Sec. 362.. T.D. 2,304 ft.; comp. 15 bbls. hr.

Russ and others' No. 1 Cantrell, NE¼ of NE¼ of Sur. No. 61 ..... T.D. 2,315 ft.; comp. 12 bbls. day.

Southwest Drlg. Co.'s No. 13 Hahl, 990 ft. from S line, 330 ft. from W line of SE Sec. 43 ..... T.D. 2,264 ft.; W.O.C.

Sun Oil Co.'s No. 33 Weiderkehr, 330 ft. from S line, 990 ft. from E line of Sur. No. 359 ..... Location.

Sun Oil Co.'s No. 49 Weiderkehr, 660 ft. S of No. 48 and 660 ft. W of No. 46, Sur. 359 ..... Abandoned.

Sun Oil Co.'s No. 59 Weiderkehr, Sec. 359..... Rigging up.

Sun Oil Co.'s No. 62 Weiderkehr, 330 ft. from S line, 990 ft. from W line of Sec. 361 ..... Drlg. 1,948 ft.

Texas Co.'s No. 11 Duval County Ranch, 1,650 ft. N and 330 ft. W, SE cor. Sec. 362, J. Poitevent Sur. .. Drlg. 114 ft.

Texas Co.'s No. 11 M. B. Johnson, 990 ft. W line and S line of N½ SW of Sur. No. 43 ..... Drlg. 2,237 ft.

KINGSVILLE POOL—KLEBERG COUNTY

Ryals & Bartlett's No. 1 Flato, 150 ft. from N line, 30 ft. from W line of NE SE Sec. 40, of Kleberg Town & Improvement Co. Sur. ..... T.D. 985 ft.; S.D.

JACOB POOL—McMULLEN COUNTY

Jane Oil Co.'s No. 1 Lark, 150 ft. from S and 100 ft. from W line of Blk. 13 ..... T.D. 1,048 ft.; testing.

C. R. Kennon's No. 1 Lark, 810 ft. from W line, 150 ft. from N line of 20-ac. tract, Blk. 27, Scrug ham Sur. ..... Coring 1,000 ft. (no report).

Loma Oil Co.'s No. 23 Jacob, 660 ft. S of No. 11, 330 ft. from E line of lease, Sur. No. 7 ..... T.D. 1,003 ft.; S.D.

Loma Oil Co.'s No. 2-A Jacob, 1,320 ft. N, 15 degrees E from No. 23 ..... Location.

CUEVITAS POOL—STARR COUNTY

Sun Oil Co.'s No. 6-B, M. Guerra & Son, 2,310 ft. S of Starr and Jim Hogg County lines and 2,970 ft. W of E line of Los Cuevitas Sur. ..... T.D. 2,055 ft.; D.S. test 2,047-55 ft.; 280 ft. oil in 20 min.; no gas pressure; 1,800 ft. oil in hole. Testing.

Sun Oil Co.'s No. 5-C M. Guerra & Son, 1,320 ft. NE of No. 4-C La Sacatosa grant ..... Location.

AGUA DULCE—NUECES COUNTY

Camp et al's No. 2 King, 990 ft. S of N line, 330 ft. W of E line of Sec. 24, R. Garza Sur. ..... T.D. 6,021 ft.; Schlumberger shwd three sands; W.O.C.

Garland Clymore's No. 2-A Ollie Purl, 660 ft. from E line and 660 ft. from S line of Blk. 4, Section 6, Ross Peters Subd. ..... T.D. 4,804 ft.; W.O.C.

SAXET FIELD—NUECES COUNTY

South Mineral Oil Co.'s No. 1 J. W. Page, E. Villareal Sur., 471 ft. from E line, 160 ft. from S line of 150-ac. tract ..... T.D. 4,871 ft.; W.O.C.

LOS OLMOS POOL—STARR COUNTY

Los Olmos O. & G. Co.'s No. 57 Kelsey Bass, 150 ft. from N line, 568 ft. from W line of SE SW Sec. 6, Porcions 75, 76 and 77 ..... T.D. 640 ft.; standing; depth corrected.

East Central Texas Wildcats

(Continued from Page 41)

CHEROKEE COUNTY

A. R. Lewis et al's No. 1 J. Bradford, 1,900 ft. from W line and 200 ft. from N line of 50-ac. tract, J. Laprella Sur. ..... S.D. 3,100 ft.

A. F. Richardson's No. 1 P. Wood, 660 ft. from N line, 1,300 ft. from E line of 498-ac. tract, 14 miles E of Jacksonville, on Cherokee-Rusk County line, Ignacio Sanches Sur. ..... Derrick.

C. & G. Oil Co.'s No. 1 New Birmingham Development Co., 467 ft. from N and W of SW cor. of J. Gibb Sur., J. F. Timmons Sur. ..... Spudding.

Southern Gulf Oil Co.'s No. 1 Joe Bailey, center 164-acre tract, 4 miles NE of Ponta, L. R. Rhodes Sur., Abstract No. 724 ..... Location.

T. J. Wood et al's No. 1 New Birmingham, 660 ft. from S and E lines of 1,128-ac. tract, 7 miles SW of Rusk, Levi Jordan Sur. ..... Flwg 65 bbls. hr., 3% water, 9% B.S.; T.D. 5,120 ft.

FANNIN COUNTY

L. Kean et al's No. 1 L. M. Boyd, 900 ft. from E line and 200 ft. from N line of survey, W. Hunt Sur. .... Waiting on cmt. to set; T.D. 2,278 ft.

FRANKLIN COUNTY

Magnolia Petroleum Co.'s No. 1 A. P. Dupree, 330 ft. out of SE cor. of survey, 7 miles NE of Mt. Vernon, W. D. Talliferro Sur. ..... Drlg. 2,315 ft.

FREESTONE COUNTY

Clyde Creighton's No. 1 Holly Bros., 854 ft. from W and center N and S lines of lease, A.B.&M. Sur. ..... S.D. 5,220 ft.

Gholson et al's No. 1 E. M. and C. H. Watson, 1,450 varas from N line and 1,150 varas from W line of survey, 6 miles NE of Fairfield, R. D. Price Sur. ..... Location.

Trinity Farm Co.'s No. 1 N. R. Stewart, 1,866 ft. SW from NE line and 933 ft. SE from NW line of 1,920-ac. tract, R. M. Williamson Sur. ..... Derrick.

HENDERSON COUNTY

Big Bad Wolf Oil Co.'s No. 1 McCreary, 1,800 ft. from W line and 330 ft. from S line of survey, 4 miles S of Malakoff, W. H. Irvin Sur. ..... Derrick.

Gulf Production Co.'s No. 1 H. T. Gilliam (George Collins), 660 ft. from S and W lines of 100-ac. tract, J. L. Scott Sur. ..... Drlg. 4,390 ft.

HOPKINS COUNTY

D. A. Hale et al's No. 1 L. M. Hall, 200 ft. from N and E lines of 70-ac. tract, 1 mile SE of Miller Grove, A. Caro Sur. .. .. Derrick.

HUNT COUNTY

G. S. & S. Co.'s No. 1 Oscar Popper, 2,670 varas from S line and 810 varas from E line of survey, 5 miles NW of Greenville, James Moore Sur. ..... Rig up.

KAUFMAN COUNTY

W. J. Lewis et al's No. 1 D. Clark, 430 ft. from S line and 600 ft. from E line of survey, 6½ miles NW of Elmo ..... S.D. 400 ft.

LAMAR COUNTY

Cole et al's (formerly Optometrist Oil Club) No. 1 J. M. McFaddin, 450 ft. from S and W lines of E 25-ac. tract, 10 miles NW of Paris, Joseph Dick Sur. ..... S.D. 2,506 ft.

MORRIS COUNTY

Simpson et al's No. 1 Staggers, 800 ft. from S line of survey and 150 ft. from W line of lease, J. B. Nelson Survey ..... S.D. 2,330 ft.

LIMESTONE COUNTY

C. M. Joiner et al's No. 1 S. A. Knobb, 900 ft. from N line and 1,000 ft. from W line of survey, one-half mile N of Falls County line, Luke Moore Sur. ..... S.D. 1,700 ft.

J. Rodgers et al's No. 1 Voi DeLone, 1,516 ft. from W line and 600 ft. from N line of W 100-ac. tract, Pedro Varela Sur. ..... Shut down.

NACOGDOCHES COUNTY

Livingston Oil Co.'s No. 1 C. B. Watkins, 150 ft. from N line and 330 ft. from NW lines of 160-ac. tract, 3 miles S of Caro, H. Y. Bailey Sur. ..... Drlg. 2,080 ft.

NAVARRO COUNTY

Bennett Brothers' No. 1 T. E. Stewart, 150 ft. from NE L of lease, 10 miles SW of Corsicana, Wm. R. Bowen Sur. ..... Drlg. 200 ft.

W. J. Keeling et al's No. 1 J. F. Rushing, 484 ft. from N line and 150 ft. from W line of 134-ac. tract, 6 miles SW of Richardson, Henry Ford Sur. ..... Derrick.

McCullough et al's No. 1 C. Berry, 330 ft. from SE cor. of 35-ac. tract, 1 mile W of Dawson, William Moss Sur. ..... Drlg. 575 ft.

Wheelock and Collins' No. 1 I. N. Cerf, 375 ft. from N line of lease and 1,050 ft. from W line of lease, James Smith Sur. No. 736 ..... Drlg. 1,120 ft.

RAINES COUNTY

J. W. Hallsell et al's No. 1 P. F. Jones, 400 ft. out of SW cor. of 23-ac. tract, 2½ miles S of Alba, B.B. B.&C. Sur. ..... S.D. 2,100 ft.

RUSK COUNTY

Arnold and Shaw's No. 1 J. E. Arnold, 1,530 ft. from S line and 300 ft. from most southerly E line of survey, J. Crawford Sur. ..... Derrick.

George Hudson et al's No. 3 Jeff Phillips, 150 ft. from N line of survey and 700 ft. from W line of 100-ac. tract, 4 miles SE of Minden, N. Villaria Sur. .... Showed little gas and oil on drill stem test; T.D. 3,600 ft.

SMITH COUNTY

Preston Rose et al's No. 1 Elisha Wiggins, 2,300 ft. from W line and 330 ft. from S line of 640-ac. tract, 2 miles SW of Winona, F. H. K. Day Sur., Abstract No. 285 ..... Drlg. 3,200 ft.

UPSHUR COUNTY

Ben G. Barnett et al's No. 1 W. S. Jones, 200 ft. out of SW cor. of 100-ac. tract, 1½ miles NW of Jamestown, James N. Dunn Sur. ..... Swbd down 2,800 ft.; no showing; T.D. 3,731 ft.

Virgil Hodges et al's No. 1 J. M. Floyd, 330 ft. from NE cor. of 126-ac. tract, 4 miles N of Gladewater, Railroad Sur. ..... Drlg. 1,880 ft.

Lanier and Moore's No. 1 Vaughan, 230 ft. from S line and 330 ft. from W line of 100-ac. tract, 2 miles NW of Big Sandy, P. W. Standifer Sur. ..... S.D. 1,042 ft.

Papadake et al's No. 1 L. L. Towery, 1,800 ft. N and 330 ft. E of SW cor. of survey, 5 miles N of Gladewater, W. L. Palmer Sur. ..... S.D. 3,780 ft.

Randerson et al's No. 1 Nid Minor, 600 ft. from NW line and 1,800 ft. from NE line of tract, D. R. Cannon Sur. ..... S.D. 3,891 ft.

VAN ZANDT COUNTY

Germany et al's No. 1 C. S. Coker, 150 ft. out of SW cor. of 55-ac. tract, William Daniel Sur. ..... S.D. 1,208 ft.

Gillum and Allen et al's No. 1 A. T. Bass, 150 ft. from W. line and 150 ft. from N line of 10-ac. tract, William Hart Sur. ..... S.D. 4,236 ft.

Griffith Bros.' No. 1 Bruce, 1,000 ft. from E line and 330 ft. from E line of 134-ac. tract, G. Martinez Sur. ..... S.D. 1,562 ft.

Isaac et al's No. 1 C. F. Darrell, 330 ft. from S and W lines of 53-ac. tract, C. B. River Sur. ..... Drlg. 1,320 ft.

W. E. McKinney et al's No. 2 B. T. Davis, 285 ft. from N line and 235 ft. from W line of 13-ac. tract, J. Goodman Sur. ..... Testing 1,166 ft.

Miller et al's No. 1 J. M. Palmer, 150 ft. from S and E lines of 69-ac. tract, Nacogdoches County School Land Sur. ..... S.D. 94 ft.

Peden and Olson's No. 3 W. Banson, 600 ft. S of No. 2 and 140 ft. from W line of tract, J. Goodman Sur. ..... Location.

Pure Oil Co.'s No. 5 A. G. Maxfield, 1,576 feet N of S line and 250 ft. W of E line of the Maxfield 107.8-acre tract, Nacogdoches County School Land Sur. .... Location.

Mrs. W. O. Smith et al's No. 1 Campbell, 1,700 ft. from N line and 300 ft. from E line of N. S. Bratcher Sur. ..... Drlg. 3,625 ft.

Wheeler et al's No. 1 Cade, 180 ft. from S line and 150 ft. from E line of 20-ac. tract, Nacogdoches County School Land Sur. ..... S.D. 240 ft.

Peden and Olsen's No. 1 J. M. Palmer, 200 ft. from E and N lines of south 2 acres of 94-ac. tract, Nacogdoches County School Land Sur. ..... S.D. 1,247 ft.

WOOD COUNTY

Cauble and Thompson's No. 1-A N. G. Bobbett, 900 ft. from S line and 330 ft. from W line of tract, 2½ miles NW of Mineola, Daniel Fuller Sur. ..... S.D. 5,554 ft.

McElreath and Suggett's No. 1 B. D. Holley, 466 ft. from S and W lines of Holly tract, 8 miles SW of Winnsboro, James M. Moore Sur. ..... T.D. 4,438 ft.

Alex Snyder et al's No. 1 T. Holmes, 200 ft. out of NE cor. of 122-ac. tract, 1½ miles SE of Hawkins, A. N. McKnight Sur. No. 399 ..... Drlg. 2,150 ft.

Wildcat Operations in West Texas

(Continued from Page 40)

DAWSON COUNTY

Ray Albaugh et al's No. 1 John Robinson, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 46, Blk. M, E.L.R.R. Sur. ..... S.D. 2,625 ft.

ECTOR COUNTY

Atlantic Oil & Prod. Co.'s No. 2 Holt, 660 ft. from N line and 1,980 ft. from E line of Sec. 19, Blk. A, P.S.L. Sur. ..... Location.

Continental Oil Co.'s No. 2 O. B. Holt, 1,980 ft. from S line and 1,980 ft. from W line of Sec. 20, Blk. A, P.S.L. Sur. ..... Set surface csg.

C. J. Davidson et al's No. 1 Cole, 660 ft. from N line and 660 ft. from W line of Sec. 10, Blk. 45, Twp. 1s, T.&P. Sur. ..... 2,350 ft. oil in hole; T.D. 4,335 ft.

Harrison et al's No. 2 Addis, 990 ft. from N line and 2,300 ft. from W line of Sec. 35, Blk. 42, Twp. 2s, T.&P. Sur. ..... S.D. 3,345 ft.

Harrison et al's No. 3 Addia, 1,650 ft. from N line and 2,200 ft. from W line of Sec. 35, Blk. 43, Twp. 1s, T.&P. Sur. ..... Location.

Landreth Prod. Co.'s No. 2-A Texas Pacific Land Trust, 441 ft. from N line and 440 ft. from W line of Sec. 3, Blk. 43, Twp. 1s, T.&P. Sur. ..... Rig up.

Landreth Prod. Co.'s No. 1-B T. P. Land Trust, 2,200 ft from the S line and 440 ft. from the W line of Sec. 3, Blk. 43, Twp. 1s, T.&P. Sur. ..... Drlg. 3,650 ft.

Landreth Prod. Co.'s No. 1-C T.P. Land Trust, 440 ft. N and 440 ft. W of Sec. 11, Blk. 43, Twp. 1s, T.&P. Sur. ..... Location.

Landreth Prod. Co.'s No. 2 O. B. Holt, 660 ft. from S and E lines of Sec. 15, Blk. 43, Twp. 1n, T.&P. Sur. ..... Rig up.

Landreth Prod. Co.'s No. 1 Clarence Scharbauer, 660 ft. from S and E lines of Sec. 20, Blk. 44, Twp. 1n., T.&P. Sur. ..... Drlg. 1,314 ft.

Landreth Prod. Co.'s No. 1 O. B. Holt, 1,980 ft. from S line and 660 ft. from E line of Sec. 19, Blk. A, P.S.L. Sur. ..... Drlg. 3,600 ft.

Landreth Prod. Co.'s No. 1 T. P. Land Trust Co., 440 ft. from N line and 2,200 ft. from W line of Sec. 3, Blk. 43, Twp. 1s, T.&P. Sur. ..... Prepare to shoot.

McCurdy et al's No. 1 Foster, 330 ft. from S line and 440 ft. from W line of Sec. 36, Blk. 43, Twp. 2s, T.&P. Sur. ..... Flowing 35 bbls. daily; T.D. 4,285 ft.

Moran Drlg. Co.'s No. 1 Smith, 330 ft. from N line, 330 ft. from W line of Sec. 12, Blk. 43, Twp. 1s, T.&P. Sur. ..... S.D. 4,425 ft.

Stanolind Oil & Gas Co.'s No. 6 J. M. Cowden, 660 ft. from N and 660 ft. W of the SE cor. of Sec. 27, Blk. 43, Twp. 1n, T.&P. Sur. ..... Tested 400 bbls.; T.D. 4,255 ft.

Skelly Oil Co.'s No. 1 Connell, 1,650 ft. from N line and 440 ft. from E line of Sec. 11, Blk. 16, P.S.L. Sur. ..... Drlg. 3,094 ft.

Texas Co.'s No. 10 W. E. Connell, 2,310 ft. from E line and 330 ft. from the S line of Sec. 1, Blk. B-16, P.S.L. Sur. ..... Rig up.

Fred Turner's No. 2-A Addia, 2,310 ft. from N and 440 ft. from E of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur. ... Cellar.

York-Harper et al's No. 1 Bates, 660 ft. from N and 660 ft. from E, Sec. 38, Blk. 44, Twp. 2s, T.&P. Sur... Drlg. 2,505 ft.

EDWARDS COUNTY

O. Houseman's No. 1 Turney, 1,650 ft. from N line and 330 ft. from W line of Sec. 176, C.C.S.D.& R.G.N.G. Sur. ..... Drlg. 325 ft.

H. E. Sides' No. 1 Turney, 1,650 ft. from N line and 330 ft. from W line of Sec. 176, C.C.S.D.&R.G.N.G. Sur. ..... Drlg. 430 ft.

FISHER COUNTY

E. T. Campbell et al's No. 1 W. R. Bishop, 570 ft. from S and 150 ft. from E of NW cor. of Sec. 18, Blk. 21, T.&P. Sur. ..... Moving in.

Condor Pet. Co.'s No. 1 Herring, 450 ft. from S and 330 ft. from W line of Sec. 192, Blk. 1, B.B.B.&C. Sur. ..... T.D. 3,110 ft.; plugged back to 3,106 ft.; will treat with acid.

Condor Pet. Co.'s No. 2 Wilson, 640 ft. from N and 2,310 ft. from W line of Sec. 4, Blk. R, W. E. Richardson Sur. ..... Rig up.

Stanolind Oil & Gas Co.'s No. 5 Steele, 1,170 ft. from S and 990 ft. from W line of Sec. 210, Blk. 1, B.B.B.&C. Sur. ..... T.D. 3,180 ft.; 120 ft. of oil and 160 ft. of S.W. on 12-hr. test.

Texas Co.'s No. 2-B Teagarden, 990 ft. from S and 330 ft. E of NW cor. of S half of Sec. 9, Blk. 8, W. E. Richardson Sur. ..... Material on ground.

Texas Co.'s No. 1 First National Bank of Rotan, 330 ft. N and E of the NW cor. of Sec. 210, B.B.B.&C. Sur. ..... T.D. 875 ft.; plugged back to 655 ft.

GLASSCOCK COUNTY

Steve Currie et al's No. 1 Turner, 330 ft. from N line and 330 ft. from E line of Sec. 19, Blk. 33, Twp. 2s, T.&P. Sur. ..... Pumped 51 bbls.; T.D. 2,160 ft.

Steve Currie et al's No. 1 Underwood, 660 ft. from N line and 660 ft. from E line of Sec. 24, Blk. 3, Twp. 4s, T.&P. Sur. ..... Location.

Empire Gas & Fuel Co.'s No. 3 G. T. Hall, 330 ft. from the N line and 990 ft. from the W line of Sec. 21, Blk. 33, Twp. 2s, T.&P. Sur. ..... 1,000 ft. of oil in hole; T.D. 2,120 ft.

John I. Moore et al's No. 1 J. S. McDowell, 1,980 ft. from N line and 660 ft. from E line of Sec. 32, Blk. 34, Twp. 2s, T.&P. Sur. ..... Drlg. 2,400 ft.

Noble Drlg. Co.'s No. 2 W. P. Edwards, 330 ft. from the S line and 330 ft. from the W line of Sec. 17, Blk. 33, Twp. 2s, T.&P. Sur. ..... Drlg. 2,300 ft.

Simms Oil Co.'s No. 2 W. P. Edwards, 330 ft. from S and 990 ft. from E of Sec. 18, Blk. 33, Twp. 2s, T.&P. Sur. ..... Drlg. 2,245 ft.

Simms Pet. Co.'s No. 3 W. P. Edwards, 330 ft. from E line, 1,358 ft. from S line, Sec. 18, Blk. 33, Twp. 2s, T.&P. Sur ..... Drlg. 2,070 ft.

Tribal Oil Co.'s No. 5 M. M. Edwards, 330 ft. from S line and 990 ft. from the W line of Sec. 16, Blk. 33, Twp. 2s, T.&P. Sur. ..... Testing show of oil and water; T.D. 2,192 ft.

HOWARD COUNTY

Eastland Oil Co.'s No. 1 Chalk, 2,310 ft. from S and 1,980 ft. from W, Sec. 125, Blk. 29, W.&N.W. Sur.... Location.

Humble Oil & Ref. Co.'s No. 4 Settles, 330 ft. from S and 2,310 ft. from W, Sec. 132, Blk. 29, W.&N.W. Sur. ..... Cellar.

Humble Oil & Ref. Co.'s No. 3 W. R. Settles, 1,650 ft. from W line and 330 ft. from the S line of Sec. 132, Blk. 29, W.&N.W. Sur. ..... Pumped 640 bbls.; T.D. 2,388 ft.

Merrick & Lamb's No. 12 Chalk, 2,310 ft. from N line, 330 ft. from W line, Sec. 125, Blk. 29, W.&N.W. Sur... Set csg. 1,502 ft.

California Oil Co.'s No. 1 A. M. Bell, 465 ft. from W line and 1,915 ft. from E line of Sec. 12, Blk. 30, Twp. 1s, T.&P. Sur. ..... Drlg. 1,000 ft.

California Oil Co.'s No. 1 Dodge, 1,915 ft. from E line and 465 ft. from S line of Sec. 1, Blk. 30, T.&P. Sur... Spudded 200 ft.

Continental Oil Co.'s No. 9 Settles, 330 ft. from N line and 990 ft. from W line of Sec. 133, Blk. 29, W.&N.W. Sur. ..... Drlg. 1,900 ft.

Dorn et al's No. 1-B Davis, 2,310 ft. from N line and 2,310 ft. from W line of Sec. 2, Blk. 30, Twp. 1s, T.&P. Sur. ..... Drlg. 700 ft.

L. C. Harrison et al's No. 2 Texas Land & Mortgage Co., 2,310 ft. from E line and 330 ft. from the S line of Sec. 4, Blk. 30, Twp. 1s, T.&P. Sur. ..... Derrick.

Plymouth Oil Co.'s No. 11 Kloh, 1,320 ft. from S line and 660 ft. from W line of Sec. 5, Blk. 33, Twp. 2s, T.&P. Sur. ..... Underreaming 870 ft.

Permian Pacific Pet. Co.'s No. 1 Capps, 330 ft. from SW cor. of Sec. 17, Blk. 29, Twp. 1n, T.&P. Sur..... Location.

Plymouth Oil Co.'s No. 10 Kloh, 660 ft. from S line and 660 ft. from W line of Sec. 5, Blk. 33, Twp. 2s, T.&P. Sur. ..... Put on pump; T.D. 2,367 ft.

Joe Rusk et al's No. 3 G. M. Dodge, 330 ft. from the N line, 330 ft. from the E line, Sec. 9, Blk. 30, Twp. 1s, T.&P. Sur. ..... Moving in machine.

Sinclair Prairie Oil Co.'s No. 12 Dodge, 330 ft. from S line and 2,360 ft. from W line, Sec. 11, Blk. 30, Twp. 1s, T.&P. Sur. ..... Running csg.; T.D. 1,398 ft.

Southern Oil Co.'s No. 1 Frazier, 660 ft. from S line and 660 ft. from W line of Sec. 4, Blk. 33, Twp. 10s, T.&P. Sur. ..... Drlg. 1,200 ft.

IRION COUNTY

S. E. Colgin's No. 1 Tankersley, 550 ft. from E of river and 150 ft. from S line of Sec. 723, H. J. Voelker Sur. ..... Spudded and S.D.

Melrose Oil Co.'s No. 1 J. D. Sugg, 1,700 ft. from the E line and 308 ft. from the S line of Sec. 25, Blk. 2, E.&T.C. Sur. ..... Spudded and S.D.

Williams-Short's No. 1 Gentry, 2,200 ft. from N line and 2,080 ft. from W line of Sec. 1, Blk. 3, H.&T.C. Sur... S.D. 865 ft.

JONES COUNTY

C. P. Campbell's No. 3 Herndon, 1,450 ft. from S line and 300 ft. from W line, Sec. 6, M.E.P.&P. Sur. ..... Swabbed 5 bbls. per hour; T.D. 2,497 ft.

Clifton & Braselton et al's No. 1 Cassey, 200 ft. from N and W lines of SE cor. of Sec. 15, Blk. 15, T.&P. Sur. ..... Drlg. 700 ft.

Elmer Close et al's No. 1 A. B. Faulks, 330 ft. from N line and 330 ft. from W line of Subdiv. No. 37, Henry Millard Sur. ..... Set csg.; T.D. 1,905 ft.

Guthrie & Lancaster's No. 1-B Campbell, 330 ft. from N and 2,276 ft. from E line of Sec. 15, Blk. 19, T.&P. Sur. ..... Drlg. 1,015 ft.

Southern Oil Corp.'s No. 3 Williams, 330 ft. from S and W line of Sec. 17, Blk. 19, T.&P. Sur. ..... Drlg. 1,310 ft.

LOVING COUNTY

R. L. Allen's No. 2 fee, 4,290 ft. from NE line, 990 ft. from SE line, Sec. 82, Blk. 33, H.&T.C. Sur. ..... Location.

R. L. Allen's No. 3 fee, 4,290 ft. from NE line, 990 ft. from NW line, Sec. 82, Blk. 33, H.&T.C. Sur. ..... Location.

R. L. Allen's No. 4 fee, 4,290 ft. from NE line, 330 ft. from NW line, Sec. 82, Blk. 33, H.&T.C. Sur. ..... Location.

The California Oil Co.'s No. 8 Reagan-McElvain, 330 ft. from NW and SW lines of Sec. 84, Blk. 1, W.&N.W. Sur. ..... Drlg. 3,315 ft.

Eppenauer Drlg. Co.'s No. 2 Hammill & Ellis, 410 ft. from NW and 796 ft. from NE lines of Sec. 3, Blk. 1, W.&N.W. Sur. ..... Cellar.

H. W. Martin's No. 4 Wheat Ramsey, 990 ft. from SE and SW lines of Sec. 83, Blk. 1, W.&N.W. Sur. ..... Fishing 1,575 ft.

J. F. Slack's No. 1 Covey, 2,310 ft. from NE line and 330 ft. from SE line of Sec. 3, Blk. 3, W.&N.W. Sur... Drlg. 1,205 ft.

PECOS COUNTY

Mack T. Anderson's No. 1 McKenzie, 660 ft. from S line and 660 ft. from W line of Sec. 1, Blk. 604 ..... Drlg. 1,354 ft.; pumped 15 bbls. in 24 hrs.

California Oil Co.'s No. 7 Smith, Lease No. 1, 275 ft. from N and 1,094 ft. from E, Sec. 37, Blk. 194, G.C.&S.F. Sur. ..... Location.

Cardinal Oil Co.'s No. 17-E Tippett, 150 ft. from E line of W half and 730 ft. from N of No. 5-E, Sec. 40, Blk. 194, G.C.&S.F. Sur. ..... Waiting on orders; T.D. 481 ft.

Cardinal Oil Co.'s No. 21-E Tippett, 336 ft. from S and 631 ft. from W of C of Sec. 40, Blk. 194, G.C.&S.F. Sur. ..... Drlg. 250 ft.

Culberson Bros.'s No. 15-B Monroe, 725 ft. from N line and 1,330 ft. from E line of Sec. 39, Blk. 194, G.C.&S.F. Sur. ..... Location.

Humble Oil & Ref. Co.'s No. 1 White, Baker, 1,320 ft from N and E lines of Sec. 44, Blk. Z, T.C. Sur. ..... Drlg. 9,771 ft.

C. S. Messenger's No. 2 Rand Jones, 1,935 ft. from S line and 1,013 ft. from W line of Sec. 5, Blk. 9, H.&G.N. Sur. ..... Drlg. 91 ft.; no report.

Mid-Kansas Oil & Gas Co.'s No. 18 Smith-Taylor, 1,356 ft. from S line, 1,896 ft. from W line, Sec. 33, Blk. 194, G.C.&S.F. Sur. ..... Location.

Mid-Kansas Oil & Gas Co.'s No. 34 Smith-Taylor, 356 ft. W of S half of Turner Tract No. 1, Sec. 33, Blk. 194, G.C.&S.F. Sur. ..... Road.

Mid-Kansas Oil & Gas Co.'s No. 35 Smith-Taylor, 344 ft. W of SE cor. of S half of Turner Trace No. 1, Sec. 33 ..... S.D. 750 ft.

Mid-Kansas Oil & Gas Co.'s No. 36 Smith-Taylor, 395 ft. S and 344 ft. E of SE cor. of S half of Tract No. 1 ..... Cellar.

Mid-Kansas Oil & Gas Co.'s No. 1 Turner, 350 ft. from N line and 350 ft. from W line of Turner Sur. No. 3.. S.D. 590 ft.

Mid-Kansas Oil & Gas Co.'s No. 12-H Yates, 408 ft. S of N line of Sec. 32 and 344 ft. W of SE cor. of S half of Tract No. 1 ..... Location.

Mid-Kansas Oil & Gas Co.'s No. 13-H Yates, 408 ft. S of N line of Sec. 32 and 344 ft. E of SE cor. of S half of Tract No. 1 ..... Location.

Mid-Kansas Oil & Gas Co.'s No. 27 Smith-Taylor, 194 ft. from N and 865 ft. from E of Sec. 33, Blk. 194, G.C.&S.F. Sur. ..... Location.

Mid-Kansas Oil & Gas Co.'s 35-B Yates, 1,619 ft. from N and 159 ft. from W of Sec. 61, Blk. 1, I.&G.N. Sur. ..... Location.

Mid-Kansas Oil & Gas Co.'s No. 38-A Yates, 350 ft. E and 395 ft. S from the NE cor. of Turner Tract No. 3 in Sec. 34½, I. G. Yates Sur. ..... Location.

Mid-Kansas Oil & Gas Co.'s No. 39-A Yates, 150 ft. N and 350 ft. W of the NW cor. of Turner tract No. 4, in Sec. 34½, I. G. Yates Sur. ..... Cellar.

Mid-Kansas Oil & Gas Co.'s No. 40-A Yates, 344 ft. from E line and 395 ft. from N of SE cor. of S half of Turner Tract No. 1 ..... S.D. 680 ft.

Mid-Kansas Oil & Gas Co.'s No. 34-B Yates, 1,088 ft. from N line and 498 ft. from W line of Sec. 61, I.&G.N. Sur. ..... S.D. 1,107 ft.

Simms Pet. Co.'s No. 2 A. J. Devlin, 330 ft. from the N line and 330 ft. from the E line of the most easterly NE cor. of Sec. 2, John D. Duval Sur., Abst. No. 2,524 ..... Location.

Tex-Mex Pet. Co.'s No. 1 Netterville, 5,610 ft. from S and 330 ft. from W of Sec. 59, Blk. 3, H.&G.N. Sur... Drlg. 510 ft.

Trans-Texas Oil Co.'s No. 1 Caldwell, 330 ft. from E line and 330 ft. from S line of Sec. 27, Blk. 40, Twp. 9, T.&P. Sur. ..... S.D. 340 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 15-C University, Sec. 12, Blk. 3... Drlg. 3,500 ft.

E. P. Kirschner and White's No. 1 W. A. White and McIntosh, 720 ft. from E and 800 ft. from N of Sec. 1,328, H.L.R.R. Sur. ..... S.D. 2,890 ft.

REEVES COUNTY

Grisham-Hunter Corp.'s No. 1 fee, 1,320 ft. from N line, 1,320 ft. from the E line of Sec. 10, Blk. 50, Twp. 8, T.&P. Sur. ..... Drlg 3,986 ft.

Hugo Freels' No. 1 B. Greenman, 330 ft. from NE line and 331 ft. from SE line of Sec. 21, Blk. 3, H.&G.N. Sur. ..... Shot 220 qts. from 3,778-3,980 ft.; no results; S.D.; T.D. 3,985 ft.

C. H. Lockhart et al's No. 1 W. D. Johnson, 330 ft. from N line and 330 ft. from W line of Sec. 3, Blk. C-13, P.S.L. Sur. ..... Moving in material.

RUNNELS COUNTY

Agnew & Sons' No. 2 Fowler, 1,165 ft. from S and 150 ft. from W of NE cor. of Blk. 23, N. Travis Sur. .... S.D. 2,559 ft.

Agnew and Currie's No. 1 H. E. Wade, 2,640 ft. from N line and 330 ft. from E line of Sec. 24, Domingo Diaz Sur. No. 532 ..... Set surface csg.; T.D. 33 ft.

Anderson et al's No. 1 W. F. James, 330 ft. from N and W lines of Subdiv. No. 20, Norvell Travis Sur. ..... Spudded and S.D.

Castor & Anderson et al's No. 1 W. F. James, 174 ft. from W line of Subd. No. 30, Norvell Travis Sur. No. 533 ..... S.D. 910 ft.

Melrose Oil Co.'s No. 1 L. P. Woods, 150 ft. from NE lines and 3,475 ft. from W line of survey, Willett Holmes Sur. No. 100 ..... T.D. 1,429 ft.
W. S. Sawyer et al's No. 1 Giesecke, 1,311 ft. from N and 4,606 ft. from E lines of survey, Blk. 131, James Hughes Sur. ..... S.D. 2,033 ft.; showing oil.
Prairie Oil & Gas Co.'s No. 1 T. E. Wade, 2,597 ft. from N and 2,140 ft. from E line of Subdiv. No. 10, Norvel Travis Sur. ..... Drlg. 2,412 ft.; showing oil.
R. Tucker et al's No. 5 McMillan, 250 ft. from N and W lines of that part of Subd. No. 32 in the D. Dias Sur. ..... Drlg. 2,495 ft.
F. D. Williams' No. 1 J. L. Elkins, 2,325 ft. from E and 1,300 ft. N of SW cor. of Blk. 12, but in Blk. 13, N. Travis Sur. No. 533 ..... S.D. 1,400 ft.

SCHLEICHER COUNTY

John M. Cooper et al's No. 1 Bert Page, 1,320 ft. from N line, 1,470 ft. from W line of Sec. 40, Blk. L, G.H.&S.A. Sur. (old well being drilled deeper) ..... Prepare to drill ahead; T.D. 5,404 ft.

TERRELL COUNTY

W. A. Sudderth's No. 1 Phelps, 2,157 ft. from N line and 2,482 ft. from the W line of Sec. 5, Blk. 4-A, G. W. Turley Sur. ..... S.D. 5,635 ft.

UPTON COUNTY

Broderick & Calvert's No. 1 Homer Trus. & Savings Bank, 1,980 ft. from N line, 660 ft. from W line, Sec. 22, Blk. B-42, Twp. 4s, T.&P. Sur. ..... Spudded.
Gulf Prod. Co.'s No. 103 McElroy, 1,980 ft. from S and 660 ft. from W. Sec. 197, Blk. F, C.C.S.D.&R.G.N.G. Sur. ..... Drlg. 10,353 ft.
Texas Pacific Coal & Oil Co.'s No. 3-D J. F. Land, 990 ft. from S line and 990 ft. from W line of Sec. 36, Blk. 1, M.K.&T. Sur. ..... Spudding.
Theabotal Oil Co.'s No. 2 J. F. Lane, 1,650 ft. from N and 990 ft. from E of Sec. 36, Blk. 1, M.K.&T. Sur. ..... Drlg. 700 ft.
Williams & Williams Drlg. Co.'s No. 1 Robbins, 1,600 ft. from S and 1,900 ft. from E, Sec. 4, G.C.&S.F. Sur... S.D. 2,037 ft.

VAL VERDE COUNTY

South-Western Exploration Co.'s No. 1 E. K. Fawcett, 2,310 ft. from S and 2,310 ft. from E, Sec. 14, Blk. L, G.C.&S.F. Sur. ..... Rig up.

WARD COUNTY

Atlantic Oil & Prod. Co.'s No. 3 Barrow, 2,310 ft. from NE line and 990 ft. from NW line of Sec. 23, Blk. 5, H.&T.C. Sur. ..... Rig up.
Alexander's No. 1 Richter, 1,650 ft. from NW, 1,170 ft. from NE line of Sec. 27, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,565 ft.
Atlantic Oil & Prod. Co.'s No. 18 W. D. Johnson, 1,650 ft. from the NE line of Sec. 9, Blk. 34, H.&T.C. Sur... Testing; est. 100 bbls.; T.D. 2,535 ft.
L. G. Bradstreet et al's No. 1 Lee Monroe, 2,310 ft. from NE and 330 ft. from SE lines of Sec. 77, Blk. 34, H.&T.C. Sur. ..... S.D. 1,037 ft.
California Oil Co.'s No. 3 D. Durgin, 1,650 ft. from SW line, 2,310 ft. from SE lines of Sec. 15, H.&T.C. Sur... Drlg. 2,255 ft.
California Oil Co.'s No. 8 York, 990 ft. from N and 2,310 ft. from SW of Sec. 10, Blk. 34, H.&T.C. Sur... Fishing 2,272 ft.
C. C. Duffey et al's No. 1 Llano-Sloan, 1,650 ft. from NW and NE lines of Sec. 24, H.&T.C. Sur. ..... Lost tools; to skid rig.
Eppenauer Drlg. Co.'s No. 1-B Combs, 438 ft. from SE and 1,826 ft. from SW, Blk. 4, J. W. Hollingsworth Sur. ..... Location.
Farrell & Co.'s No. 3 John B. Bennett, 1,650 ft. from SE line, 330 ft. from NE line of Sec. 16, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,280 ft.
Gulf Prod. Co.'s No. 30 Hutchins, 990 ft. from S line and 330 ft. from W line of Sec. 4, Blk. F, G.M.M. B.&A. Sur. ..... Set csg. 701 ft.
Gulf Prod. Co.'s No. 47 O'Brien, 330 ft. from E and 990 ft. from S. Sec. 17, Blk. F, G.M.M.B.&A. Sur. ..... Drlg. 1,355 ft.
Gulf Prod. Co.'s No. 48 O'Brien, 990 ft. from E line and 990 ft. from S line of Sec. 17, Blk. F, G.M.M.B.&A. Sur. ..... Rig up.
Humble Oil & Ref Co.'s No. 2 Richter, 2,316 ft. from NE line and 1,898 ft. from SE line of Sec. 27, Blk. 34, H.&T.C. Sur. ..... Flowed 7 bbls. in 24 hrs.; T.D. 2,550 ft.
Rector Oil Co.'s No. 1 Lee Monroe, 660 ft. from NE and 660 ft. from SE of Sec. 62, Blk. 33, H.&T.C. Sur.. S.D. 4,661 ft.
Sid Richardson's No. 1 Lee Monroe, beg'nning at the NE cor. of J. W. Hollingsworth Sur. No. 4, thence 440 ft. SE, thence NE 430 ft., J. W. Jackson Sur. No. 55 ..... Derrick.
Sinclair Prairie Oil Co.'s No. 5 Archenhold, 2,310 ft. from SE and 2,310 ft. from SW of Sec. 33, Blk. 5, H.&T.C. Sur. ..... Swabbed 85 bbls.; T.D. 2,728 ft.
Tex-Mex Pet. Corp.'s No.2-B Shell-Sloan, 2,310 ft. from NE and 990 ft. from NW, Sec. 16, Blk. 5, H.&T.C. Sur. ..... Drlg. 1,050 ft.
Tex-Mex Oil Co.'s No. 3-B Shell-Sloan, 1,650 ft. from NE and 330 ft. from NW lines of Sec. 16, Blk. 5, H.&T.C. Sur. ..... Drlg. 2,880 ft.
Westex Oil Co.'s No. 1 Cynthia Monroe et al, 330 ft. from SE and 330 ft. from SW lines of NE 80 acres of Sec. 2, J. V. Borders Sur. ..... Prepare to deepen; T.D. 2,509 ft.; showing oil.

WINKLER COUNTY

McCurdy & Easter's No. 1 Scarborough, 1,650 ft. from W and 2,310 ft. from S, Sec. 1, Blk. 77, P.S.L. Sur... Drlg. 2,800 ft.
Magnolia Pet. Co.'s No. 6 Scarborough, 1,650 ft. from S line and 330 ft. from W line of Sec. 4, Blk. 22-C, P.S.L. Sur. ..... Spudded.
Magnolia Pet. Co.'s No. 7 Scarborough, 1,650 ft. from N line and 990 ft. from E line of Sec. 18, Blk. 7, P.S.L. Sur. ..... Cellar.
Sid Richardson's No. 5-A Scarborough, 330 ft. from W and 190 ft. from S. Sec. 1, Blk. 22-C, P.S.L. Sur. ..... Moving in machine.
Richardson's No. 4 Scarborough, 330 ft. from N line and 2,310 ft. from W line of Sec. 1, Blk. 77, P.S.L. Sur... Cleaning out after shot; T.D. 3,025 ft.
Richardson's No. 6 Scarborough, 330 ft. from N line and 2,310 ft. from W line, Sec. 18, Blk. 174, P.S.L. Sur. .. Drlg. 915 ft.
Richardson's No. 5 Scarborough, 150 ft. from S line and 1,740 ft. from W line of Sec 1, Blk. C-22, P.S.L. Sur. ..... Drlg. 2,795 ft.
Sinclair Prairie Oil Co.'s No. 2-C State-Scarborough, 102 ft. N and 1,650 ft. W of NE cor. of Sec. 1, Blk. 77, P.S.L. Sur. ..... Cleaning out; flowed 65 bbls.
Sinclair Prairie Oil Co.'s No. 3 W. F. Scarborough, 102 ft. from the N line, 1,650 ft. from E line, Sec. 1, Blk. 77, P.S.L. Sur. ..... Rig up.

Wildcat Operations in Texas Panhandle

Week Ending June 16

CARSON COUNTY

Company, well, farm name, section and block—	Remarks:
Empire Gas & Fuel Oil Co.'s No. 1 C. S. Seiber, 1,326 ft. from E line, 330 ft. from S line of SE Sec. 10, Blk. 7, L&G.N. Sur.	Spudded.
Stanolind O. & G. Co.'s No. 2 L. C. McConnell, 330 ft. from N line, 330 ft. from W line, E½ SW Sec. 187, Blk. 3, L&G.N. Sur.	Fishing 3,065 ft.
Texas Co.'s No. 2 E. Cooper, 330 ft. from S line, 330 ft. from W line, S½ Sec. 6, Blk. 9, L&G.N. Sur.	Set csg. 336 ft.

CHILDRESS COUNTY

Humble Oil & Ref. Co.'s No. 1 B. P. Smith, 1,327 ft. from S line and 1,327 ft. from E line of Sec. 37, H.&G.N. Sur., Blk. 9 ..... Drlg. 3,300 ft.

DALLAM COUNTY

Eben Warner's No. 1 Jarbie, 1,520 ft. from S line, 415 ft. from W line, Sec. 2, B.&B. Sur. ..... U.R.; T.D. 3,175 ft.

GRAY COUNTY

Anderson & Bean's No. 3 J. C. Vollmert, 330 ft. from S line, 330 ft. from E line, SW Sec. 140, L&G.N. Sur., Blk. 3 ..... Cellar.
Ben Golding et al's No. 1 Massey, 330 ft. from W line of the E 40 ac. of S 80 ac. of the W 120 ac. of the N½ Sec. 41, Blk. 25, H.&G.N. Sur. ..... Drlg. 1,365 ft.
Cambrian Oil Co.'s No. 2 L. H. Webb, 990 ft. from N line, 330 ft. from E line of E½ NE Sec. 62, Blk. 25, H.&G.N. Sur. ..... Drlg. 1,850 ft.
Continental Oil Co.'s No. 8 Finley-Brown, 990 ft. from E. 330 ft. from S line, Sec. 32, Blk. B-2, H.&G.N. Sur. ..... Put on pump; T.D. 2,982 ft.
Champlin Ref. Co.'s No. 7-D J. McLaughlin, 990 ft. from W line, 330 ft. from N line of NE Sec. 33, H.&G.N. Sur., Blk. 2-B ..... Drlg. 2,715 ft.
Dixon Creek O. & R. Co.'s No. 1 E. G. Barrett, 330 ft. from N line, 330 ft. from E line of 13-ac. tract in the SE cor. Sec. 127, Blk. 3, L&G.N. Sur. ..... Shot 230 qts.; swbd. 250 bbls; T.D. 3,279 ft.
Dixon Creek Oil Co.'s No. 1 D. W. Cary, 3,600 ft. from N line, 1,157 ft. from W line of Sec. 114, Blk. 3, L&G.N. Sur. ..... C.O.; T.D. 3,394 ft.
Dixon Creek Oil Co.'s No. 1 Benedict, 330 ft. from S and 330 ft. from W, Sec. 114, Blk. 3, L&G.N. Sur. .. Location.
Empire Gas & Fuel Oil Co.'s No. 3 W. C. Archer, 330 ft. from N line, 990 ft. from E line of N½ SW. Sec. 139, Blk. 3, L&G.N. Sur. ..... C.O. after shot; T.D. 3,220 ft.
Gulf Prod. Co.'s No. 5 Ellis Cockrell, 330 ft. from N and E lines, S½ Sec. 2, Blk. M-21, T.C.R.R. Sur. .... Location.
Hoffman Oil Co.'s No. 1 D. M. Massey, 330 ft. from S line, 330 ft. from E line of 40-ac. of W 20 ac. of Sec. 41, H.&G.N. Sur., Blk. 25 ..... Rig up.
Johnson et al's No. 1 Thut, 330 ft. from N and 150 ft. S of S. A. Zweig ..... Rig.
Niapa Oil Corp.'s No. 1 Cole, 330 ft. from S and 330 ft. from W, Sec. 104, Blk. 3, L&G.N. Sur. ..... Moving in.
Shell Pet. Corp.'s No. 2 B. E. Finley, 1,231 ft. from E line, 150 ft. from S line of N 479 acres of Sec 17, B. E. Chaney Sur. ..... Drlg. 2,890 ft.
Skelly Oil Co.'s No. 8-A L. H. Webb, 990 ft. from N line, 990 ft. from E line of S½ Sec. 61, Blk. 25, H.&G.N. Sur. ..... C.O.; T.D. 2,387 ft.; 600 ft. oil in hole.
Skelly Oil Co.'s No. 6 W. C. Hesston, 330 ft. from N line, 330 ft. from W line of N¼ NE Sec. 164, Blk. 3, L&G.N. Sur. ..... C.O. after shot; T.D. 3,310 ft.
Southwest Prod. Co.'s No. 1 T. Cobb, 1,320 ft. from S line, 990 ft. from E line, NE Sec. 184, Blk. 3, L&G.N. Sur. ..... Set csg. 1,084 ft.
Stanolind O. & G. Co.'s No. 2-C W. E. Cobb, 1,320 ft. from E line, 330 ft. from S line of SE Sec. 165, Blk. 3, L&G.N. Sur. ..... Drlg. 2,960 ft.
Stanolind O. & G. Co.'s No. 1-B W. E. Cobb, 330 ft. from N line, 330 ft. from E line of SW Sec. 165, Blk. 3, L&G.N. Sur. ..... Drlg. 2,489 ft.
Texwell Oil Co.'s No. 1 J. C. McConnell, 330 ft. from S line, 330 ft. from W line, SW SW Sec. 174, Blk. 3, L&G.N. Sur. ..... Rig up.

HUTCHINSON COUNTY

Badger Oil Co.'s No. 6 Lewis, 330 ft. from S line, 330 ft. from E line, SE Sec. 8, Blk. 25, B.S.&F. Sur. .... Spudded.
Brownie Oil Co.'s No. 1 Ware, 330 ft. from N and 330 ft. from W. Sec. 124, Blk. 4, I.&G.N. Sur. ..... Cellar.
Huber Petroleum Co.'s No. 1-A J. F. Weatherly, 990 ft. from S line and 330 ft. from W line of E half SE Sec. 24, A.&B. Sur., Blk. Y ..... Drlg. 2,680 ft.
Harry Stekol's No. 1-G J. A. Whittenburg, 330 ft. from W line, 990 ft. from N line, Sec. 89, G.C.&S.F. Sur., Blk. 3, but located in Hannah Prewitt Sur. No. 1 ..... Drlg. 2,950 ft.
Ortex Oil Co.'s No. 1 N. A. Steinson, 930 ft. from N line, 390 ft. from E line of Sec. 7, T.C.R.R. Sur. ... R.U. standard tools; T.D. 1,515 ft.
Phillips Pet. Co.'s No. 3 A. Yake, 7,553 ft. from N line, 330 ft. from W line, Sec. 36, H.&T.C. Sur., Blk. 47 ..... Rig up.
Texas Co.'s No. 1 W. E. Herring, 1,200 ft. from E line, 1,200 ft. from N line of W 1,594 acres of the E. Almaguire Sur. ..... Drlg. 1,000 ft.
Trippiehorn Bros.' No. 2 R. C. Ware, 330 ft. from E line and 990 ft. from S line of E half NE Sec. 133, Blk. 4, I.&G.N. Sur. ..... T.D. 3,096 ft.; 1,400 ft. of oil in hole; put on pump.

KNOX COUNTY

C. C. Christie's No. 1 Moore, Sec. 87, Blk. 45, H.&T.C. Sur. ..... Location.

MOORE COUNTY

Phillips Pet. Co.'s No. 2 J. C. Wilson, Sec. 157, Blk. T-3, T.&N.O. Sur. ..... Drlg. 2,110 ft.

WHEELER COUNTY

Alma Pet. Co.'s No. 1-B Johnson, 330 ft. from N line, 330 ft. from W line, W½ NE Sec. 47, Blk. 25, H.&G.N. Sur. ..... Drlg. 1,350 ft.
Alma Oil Co.'s No. 2 D. E. Johnson, 330 ft. from N line, 990 ft. from W line, NW Sec. 47, Blk. 24, H.&G.N. Sur. ..... Testing 3,192 ft.
Bowers & Carver's No. 1 L. B. Sims, 330 ft. from N line, 330 ft. from E line of SW SE Sec. 60, Blk. 17, H.&G.N. Sur. ..... Drlg. 175 ft.
Dumar Oil Co.'s No. 1 E. F. Bell, 660 ft. from S line, 660 ft. from E line, SW Sec. 72, Blk. 23, H.&G.N. Sur. ..... Spudded and S.D.
Dyke Oil Co.'s No. 1 G. W. Sitter, 330 ft. from N line, 330 ft. from E line, N½ NW Sec. 28, Blk. 24, H.&G.N. Sur. ..... Cellar.
Dumar Oil Co.'s No. 1 J. W. Grogan, 660 ft. from N line, 660 ft. from W line of N½ NW Sec. 57, Blk. 23, H.&G.N. Sur. ..... S.D. 1,325 ft.
Dumar Oil Co.'s No. 1 J. K. Krison, 660 ft. from N line, 660 ft. from W line of N½ Sec. 101, Blk. 23, H.&G.N. Sur. ..... Drlg. 1,365 ft.
Mid-Continent Pet. Corp.'s No. 6 J. S. Carwile, 990 ft. from N line, 990 ft. from E line of NE Sec. 51, H.&G.N. Sur., Blk. 24 ..... Drlg. 700 ft.
Myers & Kennedy's No. 1 Harvey, 660 ft. from S and E lines of NW Sec. 67, Blk. 13, H.&G.N. Sur. ..... S.D. 2,226 ft.; showing oil and gas.
Shell Pet. Corp.'s No. 1 Bush, 330 ft. from N line, 330 ft. from E line, N½ NE Sec. 48, Blk. 24, H.&G.N. Sur. ..... Set csg. 2,363 ft.
Smith & Tharp's No. 1 T. J. DeSpain, 160 ft. from S line, 160 ft. from W line of NE NW Sec. 52, H.&G.N. Sur., Blk. 24 ..... Rig up and S.D.
Smith Bros.' No. 1 A. Plummer, 330 ft. from N line, 330 ft. from E line, N½ SW Sec. 45, Blk. 24, H.&G.N. Sur. ..... Spudded.
Smith Bros.' No. 2 R. L. Harlan, 330 ft. from N line, 660 ft. from E line, NW Sec. 49, H.&G.N. Sur., Blk. 24 ..... Rig up.
Texas Co.'s No. 1 P. M. Keeler, 330 ft. from N line, 330 ft. from W line, NW Sec. 48, Blk. 24, H.&G.N. Sur. ..... Drlg. 1,000 ft.

Some Basic Problems in Conservation and Future Production of Pennsylvania Grade Crude Oil

By EDWARD STEIDLE
Dean, School of Mineral Industries, Pennsylvania State College*

Pennsylvania has produced over a billion dollars' worth of crude oil since Colonel Drake drilled his historic well at Titusville in 1859. In the development of this industry several hundred thousand oil wells were drilled in our commonwealth which defined the limits of 328 different oil and gas pools or fields, each known by a distinctive name, and resulted in the discovery of 58 distinct sands or horizons, one or more of which are productive of oil and gas in the various pools. The present productive acreage of the state is approximately 650,000 acres, and that of the entire Pennsylvania Grade crude oil area, including Pensylvania, New York, West Virginia and southeastern Ohio is about 1,888,000 acres. The Pennsylvania area from Kane to Butler is estimated to have an oil content of around 2,000,000,000 bbls., and that south and west of Butler to contain approximately 2,500,000,000 bbls.

These statistics are quite impressive until viewed in the light of those for the present daily oil production. The entire "Grade" area, as of April 21, 1934, produced only 65,550 bbls. of crude oil per day, of which 41,800 bbls. were from Pennsylvania. However, regardless of the relatively small present rate of production from these reserves as compared with other regions in the United States, we must realize that there is still a great deal of oil left in the "Grade" area and, of course, in Pennsylvania acreage. It is estimated in this area that the average recovery by natural production methods is only 12-15 per cent. It is well to bear in mind, also, that this is not ordinary crude oil but the highest grade known; it commands a substantial premium over any other. Four and one-half billion barrels of this premium petroleum are still in the sands. But of this great volume of oil, much cannot be recovered economically by the methods now in use. The recovery of this oil reserve is of prime importance to the operator at Bradford, to the producer in the southern districts, to the refiner of Pennsylvania Grade crude oil, to the consumer, and last but by no means least, it is the major problem facing the petroleum engineer today.

It is important to realize that of the entire Pennsylvania Grade area, the Pennsylvania section of the Bradford Field, representing only about 5 per cent of the productive acreage, is now producing more than 50 per cent of the crude output from this area and approximately 80 per cent of the crude produced in the state of Pennsylvania. While this particular field is unique as a petroleum reservoir, its present productive status can be attributed primarily to the application of a new production method, and also to petroleum engineering advancements. This field was discovered in 1871, reached its peak of natural production 10 years later, and then gradually declined until in 1907 it was of very little consequence. About this time the first effects of water flooding were noticed and the field was rejuvenated, particularly after water flooding was legalized in 1921. Whether or not this method of production is the best that can be devised remains to be seen. It has greatly increased the production of Pennsylvania Grade crude, contributed greatly to the prosperity of the region, and has added a large recoverable reserve for the immediate future. But even after the present flooding method has extracted its quota, it has been estimated that at least 60 per cent of the oil originally present in this field will still remain locked in the sand. Therefore, important problems demanding attention now are: Just how much oil is left after flooding is completed; the manner in which it is retained in the spaces between the mineral grains; its distribution throughout the productive sand bodies; and the effect of water flooding on the oil still remaining in the sands.

Project Under Way

At the present time an extensive project is under way to determine more about the producing formation at Bradford. Various companies are taking eight complete diamond drill cores of the Bradford sands which will be analyzed and studied in the petroleum research laboratory of the School of Mineral Industries. Here, also, important experiments are being conducted with Bradford sand cores to determine the effect on ultimate recovery of adding various chemicals to the flood water.

Before going further into the question of research, we might well pause to consider what the industry means to Pennsylvania, and to the nation. This is more than a cold, scientific question of oil production; it involves much beyond a mere statistical calculation. There are millions of consumers of Pennsylvania Grade petroleum products who have learned to depend upon them. There are armies of trained workers whose economic security is rooted in the industry. There are millions of dollars invested in refineries, pipe lines and market facilities handling Pennsylvania Grade products which can be used for no other purpose. The future of oil production in Pennsylvania is vital to the commonwealth, and to the well being of a large number of her people. The question, then, of whether the industry can obtain substantially the same amount of crude petroleum in the next 75 years that it did in the 75 following the drilling of the Drake well, is of major importance. To digress for a moment, it may be interesting to note that, looking still further ahead, a geographic survey of the Oil City region is now being planned. This survey will consider the past, present and future of the city's industries in relation ot its natural resources. The possibility of the development of new industries will be studied as well as the needs of that most basic industry—the production of crude petroleum. It is believed that the findings of such a survey may well form the basis for long-range planning, and that publication of the results in readily understandable form can accomplish considerable good.

The industry, however, is mainly interested now, and will be for many years, in recovery of oil from the huge potential reserves in the Bradford-Allegany, Kane to Butler, and the Butler southwest districts of Pennsylvania, as well as from the other fields of the Pennsylvania Grade area. Pennsylvania is today producing oil by pumping out the oil which accumulated in the well by natural forces, by repressuring with air and gas, and by water-flooding. We should known the limiting possibilities of these methods if we are to use them to the greatest advantage. Is everything being done with them that can be done? Are the mathematics of water flooding thoroughly understood? Would different pressures, different rates of injection, or the use of different fluids themselves, help us materially? Are there better driving patterns that might be used, more efficient spacings for wells? Could we use mining processes advantageously for the extraction of crude oil from oil bearing rock? Work has been done on some of these problems by various investigators, including the School of Mineral Industries, but the scope is so large that many important phases have been scarcely touched. We must have definite knowledge concerning our present operations, and some means of knowing what we could do if we left the beaten track, if we are to progress in this field.

Possibility of Mining

In this connection many of us have thought of, or heard mentioned, the possibility of mining the sands containing the reserves of oil. The idea of mining the oil bearing sands in a reservoir to obtain crude left behind by other production methods is not new. It is a matter of common knowledge among petroleum engineers that oil mining results in a considerably greater recovery of oil than any other process now in use. Commercial oil mining operations in the Pechelbronn Field, Alsace, France, were commenced about 1866, and are being carried on today. The Wietze mine in the Province of Hanover, Germany, was opened in 1919 and is being operated at the present time. The yearly production from the Clemenceau, Le Bel and Daniel Mieg mines at Pechelbronn from 1917-1928 averaged 165,250 U. S. barrels per year, reaching a maximum production of 270,000 bbls. in 1924. The Wietze mine is reported to have produced 189,000 U. S. barrels of oil in 1929. These figures indicate what oil mining methods can do in areas which would certainly be classified as depleted, although it is not the purpose of this paper to present a detailed analysis of these operations which are carried on under such different natural, economic and sociological conditions.

In general, there are three types of oil mining which are employed separately or in combination. One type is not dissimilar in many respects to coal and ore mining operations, the oil bearing sandstone being excavated and conveyed to the surface. Here it is crushed and processed in tanks with hot water and detergents such as soda ash or sodium silicate to free the oil which it contains. The oil is drawn from the top of the processing tanks to storage. The washed sand is dried by air and conveyed to a borehole through which it falls to the sand workings where it is used for backfilling. This method may properly be termed oil sand mining. This method, which recovers more than 90 per cent of the total oil content of the sand, is used at the Wietze mine in Germany in one sand which has a fine texture, low permeability, and high density. The oil is tightly held in the rock by capillary forces and does not drain readily. In the second method the oil is drained out of the sand by driving entries partly in the cap rock, and partly in the top part of the sand, and sinking sumps to the bottom of the sand at stated intervals depending on the permeability. The oil is

(Continued on Page 60)

*Before annual meeting, Pennsylvania Grade Crude Oil Association, State College, Pa., June 14-15.

IMPORTANT BOOKS
for the Oil Man's Library

"PETROLEUM PRODUCTION ENGINEERING"

To secure a comprehensive idea of the development that has taken place in the exploration for gas and oil during the past decade it is only necessary to read Lester C. Uren's new book, "Petroleum Production Engineering—Oil Field Development."

Professor Uren is professor of petroleum engineering, University of California, Berkeley, Calif. With the acknowledged co-operation of oil-company executives and technologists, and the use of the research, library and other facilities of the University of California, Professor Uren has been fortunately situated to carry on this work.

Recognizing the need of such a book that would serve the student of petroleum engineering and others who were interested in production problems, Professor Uren prepared his book in 1924 and has now rewritten and brought it up to date. A second volume will appear shortly dealing with the problems of securing the oil or gas after the wells are completed.

This new work is patterned after the original book and contains 12 chapters dealing with the properties, occurrence and association of petroleum; petroleum exploration methods; acquisition of title to oil lands; development of the field; drilling equipment and methods, rotary drilling equipment and methods; casing, casing appliances and casing methods; fishing tools and methods; oil-field hydrology, exclusion of water from wells; finishing the well and well records.

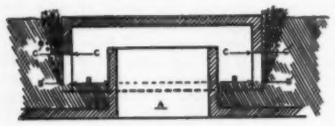
The book is up to the minute on information concerning new methods and equipment, especially that used on the Pacific Coast. It contains 531 pages and is well illustrated throughout with extensive bibliography at the end of each chapter.

"Oil Field Development," the first volume of "Petroleum Production Engineering," may be purchased through the Book Department of The Oil and Gas Journal at the regular price of $5, express prepaid. A copy will be forwarded promptly upon receipt of check or money order for that sum; where no payment accompanies the order the book will be sent express c.o.d.

New Method Presented for Computing Flow of Vapor Through Bubble Cap Slots in Tower

By M. C. ROGERS and E. W. THIELE
Standard Oil Co. (Indiana)*

The pressure drop suffered by the vapors in passing through a plate is an essential element in the design of bubble-cap columns. The overflow height must be great enough to overcome this drop, and this may set a lower limit to the distance between plates, although usually this distance will be fixed by other considerations. In vacuum columns the drop



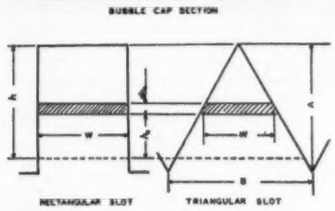


Figure 1—Cross section of bubble cap in action

may be of great importance, because the pressure drop caused by the plates tends to raise the absolute pressure just where a low pressure is most needed—at the bottom. Moreover, the proper design of caps, and their number per plate, depends on a knowledge of the fraction of the slots, teeth, or other means of subdivision which is actually used by the rising vapors, and this information is also required to determine the pressure drop.

This paper gives an analysis of the components of the pressure drop, considering especially the important case in which the bubble caps have teeth, slots, or similar devices along the lower edge. It presents a new formula from which tooth opening and pressure drop through the teeth may be computed, and gives the results of experiments to show the validity of the formula.

Available Literature

There seems to be little available on this subject in the literature. Walker, Lewis and McAdams[1] and Chillas and Weir[2] do not refer to the change in tooth opening with vapor volume (which they may have considered to be sufficiently obvious), and their treatment suggests that the area of the slots is fixed, as is the case perhaps in certain types of cap. Robinson[3] refers to the change in tooth opening and states that the extent of the opening can be computed, but it is difficult to determine what method of computation he had in mind.

In Figure 1 a diagrammatic cross section of a bubble cap in action is shown. Vapors are ascending through the opening, A (the vapor nipple), and bubbling through the liquid at the slot B-C. There will be a certain pressure drop between A and B because of the flow of vapor. This cannot be accurately calculated but a fair idea of the order of magnitude can be obtained by considering the narrowest cross section as an orifice. It will ordinarily be found that this drop is quite negligible in comparison with the others.

At B, the surface of the liquid under the cap, the liquid is fairly quiescent, and there will be little or no flow in the plane of the paper. The pressure at B′, just outside the slot, will be the same as at B, the two points being at the same level, and the liquid at the two points being part of the same mass; there will be no vapor bubbles below this point. The driving force tending to blow vapor through the slot is zero and there will be no bubbling. At every higher point, however, say C, the pressure of the liquid outside is less than that of the vapor inside by the liquid height, BC (corrected for the density of the vapor). The force available to bubble liquid outward is therefore equal to this height of liquid. (The effective density of the liquid may be somewhat reduced by the presence of

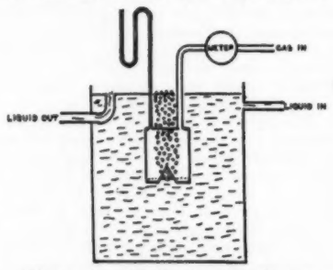


Figure 2—Single-slot bubble cap

vapor in it.) If every point in the open space in the slot is considered as an orifice, integration will give the total volume which can pass through for any given tooth opening, and the opening will therefore be expressible as a function of the volume of vapor to be handled. Integrations for two important cases are given below; other shapes can be handled in a similar manner, graphical integration being necessary in some cases.

Since the pressure at B′ is the same as that at B, we may say simply that pressure drop over the plate is equal to the difference in head of liquid on the outside and inside of the cap, plus the usually negligible drop in the passages under the cap. The height of liquid under the cap is, of course, known when the tooth opening is known, but the question of the static head above the top of the notch is not so easy to solve. If we consider a cap with a given submergence above the top of the slot and force vapor through the cap so as to produce little or no splashing, the head required will be equal to that represented by the submergence. If, then, vapors are forced through the cap so as to cause a steady condition of splashing and support a constant number of liquid droplets in the space above the cap, certainly the static head should remain as before and not increase or decrease because the same amount of liquid is present as when no vapors were flowing. However, in actual cases, a weir is present on the plate to govern the rate of overflow to the next tray below. The rate of flow over this weir is proportion to $h^{3/2}$ where h is the head of fluid flowing. In a plate where a continuous foam is present over the weir, the rate should be governed by the height to which the foam rises. The density of the foam is inversely proportional to the height to which it rises, provided a uniform feed of liquid is supplied, but the rate of overflow to the next plate is proportional to the $^3/_2$ power of the height so that there must be a decrease in static head of sufficient amount to provide a weight flow of foam equivalent to the weight of liquid entering the tray.

Hence, the exact pressure drop will depend on the height of foam produced, the closeness of the overflow weir to the bubbling caps, and the relative height of the weir and the cap slots. If the weir were far removed from the splashing, then the pressure drop would be represented by a head of the liquid equal to the height in the quiet portions of the plate less the height under the caps, and would increase as the vapor velocity rose by the

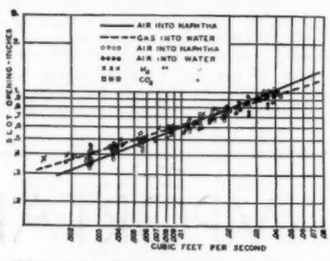


Figure 3—Data obtained with triangular slots

amount of increase in the slot opening. Actually the increase will be less than this and may even be negative.

Derivation of Equations

Triangular Shaped Slots. In Figure 1:

Let h = slot opening, inches.

$R = \dfrac{\text{density of vapor}}{\text{(dens. of liq.)} - \text{(dens. of vap.)}}$

h/12R = maximum head of gas flowing through slot, feet.

A = altitude of triangular slot. inches.

B = width of slot at base, inches.

Let $h_a/12R$ = head of gas at height h_a, ft.

At h_a and through the section dh_a, $U = C\sqrt{2g(h_a/12R)}$

where U = velocity, feet per second.

The differential volume dv_a through $dA = UdA = dV_a = C\sqrt{2g(h_a/12R)}\,W dh_a$

$W = 2(h - h_a)\,(B/2A)$ [in inches].

$$dV_a = C\sqrt{2g(h_a/12R)} \times \frac{2(h - h_a)\,(B/2A)\,dh_a}{144}$$

$$= \frac{(C)(2)\,(B/2A)}{144}\sqrt{2g/12R} \times (h - h_a)\,h_a^{1/2}dh_a$$

$$V_a = \frac{(C)(2)\,(B/2A)}{144}\sqrt{2g/12R} \times \left[\int_0^h hh_a^{1/2}dh_a + \int_0^h h_a^{3/2}dh_a\right]$$

$$= \frac{(C)(2)(4)\,(B/2A)}{(15)\,(144)\,[12]^{1/2}}\sqrt{2g/R}\,hh^{5/2}$$

$$= (C)\,(B/2A)\,(0.001068)\sqrt{2g/R}\,h^{5/2}$$

V = volume per cap = (N) (V_a).

N = number of slots per cap.

Rectangular Shaped Slots. In Figure 1, let h, h_a, and R represent the same quantities as in the triangular slot. At section with height h_a

$$U = C\sqrt{2g(h_a/12R)}$$

The differential volume, dV_a, through the area, dA, is:

$$UdA = dV_a = C\sqrt{2g(h_a/12R)}\,(Wdh_a/144)$$

$$= (CW/144)\,\sqrt{2g/12R}\,h_a^{1/2}dh_a$$

$$V_a = \frac{(C)\,(W)}{144}\sqrt{2g/12R}\int_0^h h_a^{1/2}dh_a$$

$$V_a = \frac{(C)\,(W)\,(2)}{(144)\,(3)}\sqrt{2g/12R}\,h^{3/2}$$

$$= (C)\,(W)\,(0.00134)\,\sqrt{2g/R}\,h^{3/2}$$

V = volume per cap = (V_a) (N).

N = number of slots per cap.

Experimental Data

The data which were available for testing the equations were obtained from a series of experiments made by H. G. Schnetzler of this laboratory on bubble

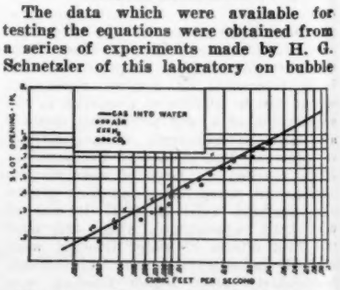
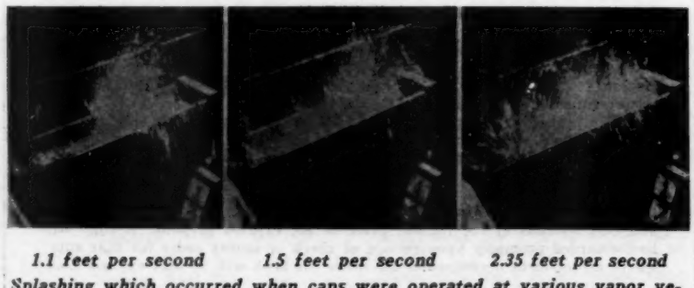


Figure 4—Data obtained with rectangular slots

caps containing a single slot. The general arrangement of this apparatus is shown in Figure 2. Three different gases were passed through V-shaped and rectangular shaped openings. The openings were varied from 0 to 100 per cent. The V-slots were of three types: cut in thin metal, cut square from 0.25-inch ma-



1.1 feet per second 1.5 feet per second 2.35 feet per second

Splashing which occurred when caps were operated at various vapor velocities

*Paper presented before Petroleum Division of American Chemical Society and published in the society's magazine, "Industrial and Engineering Chemistry."

[1]Walker, Lewis and McAdams, "Principles of Chemical Engineering," 2nd ed., p. 625, McGraw-Hill, 1927.

[2]Chillas and Weir, Ind. Eng. Chem., 22, 211 (1930).

[3]Robinson, "Elements of Fractional Distillation," 2nd ed., p. 109, McGraw-Hill, 1930.

terial, and cut from 0.25-inch material but with a beveled edge so as to make a sharp-edged slot with the bevel on the upstream side. The rectangular slot experiments were made only with a slot cut in thin metal.

Use of Air

The experiments included passing air through the slot into water and also into a light petroleum fraction (cleaner's naphtha) at various velocities and with various heights of liquid above the top of the notch. However, the majority of the runs were made on the triangular slot with 1.5 and 2.1-inch static heat of liquid above top of the slot. In the case of air blowing into water, two runs are reported with static heads of 1 and 0.6 inch, respectively. In order to determine

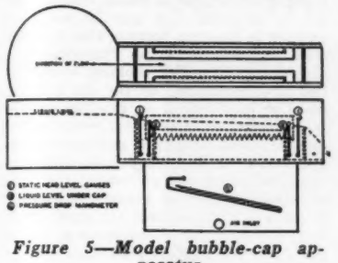


Figure 5—Model bubble-cap apparatus

the effect of a change of gas on the performance of the slot, hydrogen and carbon dioxide were passed through the triangular and the rectangular slots.

The procedure used for taking the data for these experiments was as follows:

Gas was admitted to the cap until the liquid level inside reached the top of the slot. The reading on the pressure manometer at this time was taken as the zero reading on the static head above the slot. Additional air was admitted slowly until the first small bubbles appeared. This point was called the "minimum flow point," and the pressure manometer was read again. Then a series of readings was taken with varying rates of gas flow until the pressure manometer indicated that the notch was wide open. The same procedure was followed in all runs.

When the data obtained from these experiments were plotted, discrepancies appeared at the lower velocities, which caused a rather wide variation in the results. The data obtained while gas was actually flowing were very uniform, and it was observed that the minimum flow readings gave much more uniform results when used as zero readings than the observed zero reading. This is reasonable because the zero reading involved three observations, one of which was the observation of the liquid level and might have caused the inconsistency of the zero readings. It was found that, if the readings beyond the minimum flow were accepted as being accurate, and the average value of the difference between the minimum flow and the observed zero readings were added to these, the data could be plotted to give uniform results.

Figure 3 shows the data obtained when air was passed through the three types of triangular slots into naphtha. The data plotted are volume of gas against the height of the open slot in inches. From the development of the formula for flow through a triangular notch, this will also represent the lost head (in feet) of vapor flowing if it is multiplied by the factor which changes it from inches of liquid to feet of gas.

Figure 3 also shows the results obtained by passing air through the various types of triangular notches into water. These data include runs in which the static head over the top of the notch varied from 0.6 to 2.16 inches. There is slightly more spread in these data than in those obtained with naphtha, because there was an insufficient number of runs made in some instances to justify applying an average correction factor to the zero reading in all cases. It should be noted also that there are two sets of points which are given for the flow of hydrogen and of carbon dioxide through the notch. It can be shown that the volume of gases discharged through the orifice at a given absolute pressure will be in the ratio of the square roots of their densities. Then with hydrogen the flow should be

$$\sqrt{\frac{\text{density of air}}{\text{density of hydrogen}}}$$

times the flow for air at the same absolute pressure and through the same size opening. This ratio was applied to the runs made with hydrogen and carbon dioxide to make a direct comparison with air possible. The agreement is very good.

The data obtained with the rectangular slot include only three runs, one each with air, hydrogen, and carbon dioxide flowing through water. These data could not be compared directly within themselves to correct the zero reading, but they agree quite well, especially in the cases of air and carbon dioxide. This is shown in Figure 4.

The data obtained for air flowing through a triangular slot into naphtha may be represented by:

$V_s = (0.51)\ (0.067)\ h^{5/2}$

V_s = volume flow through one slot per second.

h = head of liquid, or opening of the slot, inches.

$C = 0.51$

$$(0.067) = \frac{B/2A}{(144)\ (6.5)}\sqrt{2g/R} = \frac{(0.312)}{(144)\ (6.5)}\sqrt{64.4/0.001622}$$

Air, carbon dioxide and hydrogen flowing through the triangular slot into

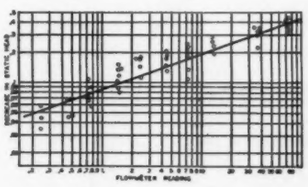


Figure 6—Static head vs. flow through caps for the model cap

water may be represented by the equations:

Air: $V = (0.51)\ (0.0775)h^5$

Hydrogen: $V = (0.51)\ (0.294)h^5$

Carbon dioxide: $V = (0.51)\ (0.0625)h^5$

Air, carbon dioxide and hydrogen through a rectangular slot into water may be represented by the equations:

Air: $V = (0.51)\ (0.078)h^{7/4}$

$$(0.078) = (W)/144\ \sqrt{2g/12R} = (0.25)\ (0.00134)\ \sqrt{2g/R}$$

Hydrogen: $V = (0.51)\ (0.292)h^{7/4}$

Carbon dioxide: $V = (0.51)\ (0.0624)h^{7/4}$

The results show fair agreement with the anticipated results. It is perhaps a coincidence that exactly the correct power, 5/2, in the case of air bubbling into naphtha was found. For engineering purposes, however, it seems reasonable to assume that this equation is satisfactory for use in designing petroleum columns. If naphtha had been used in the rectangular-slot experiments, results might have been obtained which would correspond more closely wih the theoretically anticipated value.

Data on Total Pressure Drop

In order to study a particular practical case, the model bubble cap in Figure 5 was used. It contained 54 triangular slots 1.25 inches high by 0.625 inch at the base, but in 0.25-inch material. The air flowing through the caps was measured with an orifice meter.

Pressure drops and liquid levels were measured by level gauges and manometers as shown. The manometer, 3, for measuring the drop through the cap was inclined to give readings of 6 to 1 ratio. It was connected to the air-distributing chamber below the cap. The liquid level under the cap was measured with gauges shown at 2. The height of the liquid over the cap was measured in gauges at 1, located at each end of the channel. At the beginning of a run the initial static head was determined by observing the reading on the inclined manometer, 3, when the liquid levels in gauges 2 were even with the tops of the slots in the cap.

The formula for flow through bubble-cap slots shows that the pressure drop through the slot opening is independent of the static head over the slots. The values obtained experimentally should have changed according to this formula, were it not for the change in the static head itself. The total pressure drop as measured is made up of static head plus drop through the slots, and any deviation from the value calculated from the formula is due to a change in the static head or liquid level over the tray.

Seven runs were made on the model cap, using air and water. The initial head over the slots was determined by reading the inclined manometer when the liquid level, measured by gauges 2, was at the top of the slots. The level of the liquid over the cap (in the channel) was measured on gauges 1. The initial static head over the slots was varied from 1 to 2.25 inches during the series of runs. The results of these runs are shown in Figures 6 and 7. In order to compare and correlate the data, the initial static head over the slots has been subtracted from all of the readings. It has been shown that this should not affect the value of the change in pressure with change in flow through the slots.

An examination of the data showed that there was a small but distinct lowering of the static liquid level in the channel with increased air flow. This decrease in level is plotted in Figure 6 against flowmeter readings (air flow). These data are scattered but it must be remembered that the changes observed were small and that water moving in the level glasses added to the difficulties of obtaining readings. The data are fairly well represented by a straight line on log paper, and the drop in liquid level varies from zero at no flow to about 0.45 inch at the maximum flow with slots open the full amount. These results confirm the theoretical considerations that the static head over the top of the slots might actually decrease as the vapor flow through the cap causes a foam to build up over the overflow weir. The effect is undoubtedly influenced greatly by the location of the weir and perhaps by the nature of the liquid and vapor on the tray.

Figure 7 shows the correlation of the data on actual pressure drop and the comparison of the actual opening of the slots with the calculated value. Curve 1 shows the actual pressure drop readings for all runs. The formula for flow through slots, represented by Curve 3, Figure 7, gives values different from those of Curve 1. It should be observed (Curve 1) that no vapor flow took place until the slots were open to about 0.4 to 0.5 inch, and that the pressure remained practically constant from minimum to maximum flow.

Curve 2, Figure 7, represents the actual slot opening determined by adding the change in liquid level (static head) from Figure 6 to the apparent pressure drop (slot opening) shown in Curve 1, Figure 7. Curve 2 agrees fairly well with Curve 3 with the exception of the values for lower rates of flow. For these rates, surface tension effects undoubtedly play an important part and seem to

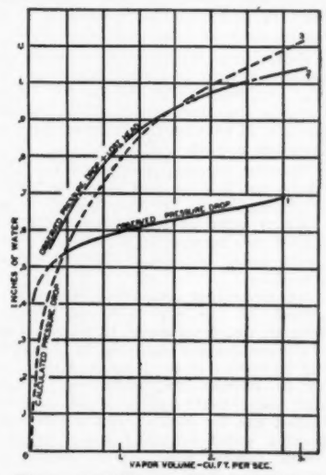


Figure 7—Observed vs. calculated values for model bubble cap

have more influence in the wooden experimental cap than they exerted in the case of single slots cut from metal. The lower rates of flow are not particularly important for the present purposes.

This investigation has shown that for the rectangular bubble caps, the friction loss through the chimney uptake and space under the cap is negligible and need not be considered when estimating pressure drop. The pressure drop through the slot opening can be expressed by a formula developed from theoretical considerations, using an orifice constant of 0.51. The static head above the slot tends to be a maximum at vapor flows near zero, and, in cases where the overflow weir is located near the bubble caps, the static head may decrease markedly with increased vapor flow.

It is believed that the formulas given for tooth opening are accurate enough for engineering purposes, and that similar formulas for slots of other shapes using 0.51 as a coefficient will be found satisfactory. Since only two of the three factors governing the pressure drop are susceptible to calculation, the treatment given here cannot yield anything but maximum values. The data, however, should suggest methods of designing bubble trays having a low pressure drop.

Gulf Coast Water Shipments During Month of April

Company and terminal—	Crude—Coastwise	Crude—Export	Refined—Coastwise	Refined—Export	Total
Atlantic Pipe Line Co:					
Atreco	1,488,121.66	105,762.36	.....	.....	1,593,884.02
Texas City	326,447.32	.....	.....	.....	326,447.32
Harbor Island	287,957.95	.....	.....	.....	287,957.95
Gulf Refining Co:					
Port Arthur	220,497.77	.....	2,058,510.90	.....	2,279,008.67
Humble Oil & Ref. Co.:					
Baytown	1,176,209.00	.....	1,634,060.12	1,068,676.62	3,878,945.74
Harbor Island	1,708,347.00	.....	.....	.....	1,708,347.00
Ingleside	95,800.00	.....	.....	.....	95,800.00
Texas City	320,232.00	.....	.....	.....	320,232.00
Magnolia Petroleum Co.:					
Beaumont	786,262.51	.....	1,940,630.00	.....	2,726,892.51
Pure Oil Co.:					
Smith Bluff	482,518.00	.....	399,535.00	.....	882,053.00
Shell Petroleum Corp.:					
Houston	296,845.02	.....	1,293,420.08	71,733.02	1,661,998.12
Norco	.....	.....	252,256.00	92,160.00	344,416.00
Standard Oil Co. (La.):					
Baton Rouge	313,116.00	.....	1,418,332.00	355,947.00	2,087,395.00
Sun Pipe Line Co.:					
Sabine Pass and Sun	1,639,462.14	.....	.....	.....	1,639,462.14
Texas Co.:					
Port Arthur	1,392,657.00	217,920.00	2,075,702.00	678,552.00	4,364,831.00
Miscellaneous:					
Houston	1,583,306.98	617,621.00	983,713.80	229,874.36	3,414,516.14
Total April	12,117,720.35	941,303.36	12,056,219.89	2,496,943.00	27,612,186.60
Total March	11,509,638.27	789,139.72	11,996,619.60	2,537,838.04	26,833,235.73
Difference	608,081.98	152,163.64	59,600.29	40,895.04	778,950.87

Individual Gas-Making Machine Will Enlarge Market for Product of Natural Gasoline

By EDWARD A. DIETERLE
Consulting Engineer, Chicago

Millions of barrels a year of natural gasoline may find a new market and the benefits of gas may be brought to millions of families through the medium of an individual gas-making machine that has been perfected after several years of research and development. The machine converts liquid pentane into vapor, mixes the vapor with air in the correct proportions and delivers to the burners of standard appliances gas of uniform heating value throughout the year, regardless of weather or other conditions.

Natural gasoline is seeking recognition as a factor in the total gasoline supply of the country. This, of course, means competing on a price basis with refinery gasoline for motor fuel purposes.

The gas machine can outbid the automobile engine for whatever quantities of pentane its development may require, because the machine can produce gas at a cost comparable with the manufactured gas rates in the average small American city, with pentane at 30 to 35 cents a gallon. The machine has been amply tested and proved. Ten of them have been in operation in various country homes, some as long as four years.

Bottled gas cannot compete with the pentane gas in any case where gas is used in substantial volume the year round or over long periods. The relative economy of pentane gas increases as consumption goes up.

Summer cottages, camps and the like, where gas is used only over week-ends or during short vacation periods, continue to offer an undisputed field for bottled gas because such small requirements would not justify installation of a machine.

An interesting comparison of costs is offered by the experience of Thomas Midgley, Jr., inventor of Ethyl gas. One of the pentane gas machines was installed last November at the home of Mr. Midgley in Worthington, Ohio, for cooking and water heating service. It replaced bottled gas for cooking and a kerosene-burning water heater. Figures covering several months show that to obtain the same service from bottled gas (at present prices) would cost him more than $130 a year in excess of the cost of the pentane gas, figuring pentane at 30 cents a gallon.

Electrically Operated

The entire mechanism of the gas machine is housed in a small vertical steel tank which is mounted on a larger two-compartment horizontal tank, one compartment of which holds liquid pentane. The other compartment is the storage chamber for finished gas. The mechanism of the gas generator is electrically operated and it works automatically through the agency of a pressure-actuated mercoid switch.

The calorific value of the gas remains constant whether the demand is for the full capacity of the machine or for only a small fraction of it—whether it is being called on to run a kitchen range, a water heater and other appliances at full speed, or only to feed a pilot light. This performance is possible because the latent heat of vaporization is supplied positively by means of a specially designed electrically heated vaporizer.

The purpose of this machine is to bring gas to the millions of families who are beyond the reach of city gas mains or of the service furnished in many small communities by butane-air gas plants.

In the past two or three years the use of natural gas has spread rapidly, thanks chiefly to three factors: First, improvement in the technique of pipe line construction, particularly the use of large-sized welded pipe; two, development of satisfactory low cost gas-making units for stand-by use to produce gas to meet peak loads and thus hold down maximum demand charges assessed by the natural gas pipe line companies; three, readjustment of rates by gas companies which have generally reduced the cost of gas to the consumers.

But, of course, there are many communities to which natural or manufactured gas will never be available because the population is too small to provide a profitable load. To some of such communities the butane-air gas plant offers the benefits of gas heat but such plants, too, have their economic limitations. For instance Leon J. Willien says that a butane-air gas plant cannot yield an adequate return on the investment unless it serves at least 750 to 1,000 customers. This presupposes a town of 7,500 to 10,000 population. Mr. Willien showed in tabular form the return from a butane-air gas plant serving various numbers of customers, as shown in Table 1.

TABLE 1—RETURNS PER YEAR ON BUTANE-AIR GAS PLANT
(Table abridged from Willien's paper)

Customers served	300	500	750	1,000	1,500
Butane	$3,500	$5,835	$8,750	$11,670	$17,500
Power	422	705	1,060	1,410	2,120
Superintendent and labor	600	600	600	1,000	1,000
Miscellaneous supplies and expenditures	350	350	350	500	500
Production maintenance	190	315	470	630	940
Total production and maintenance	$5,062	$7,805	$11,230	$15,210	$22,060
Total operating expenses	9,683	14,805	20,755	27,010	37,960
Total taxes and depreciation	3,575	4,652	6,002	8,128	10,830
Net revenue	542	3,493	7,593	10,552	19,535
Net return on capital investment, per cent	1.0	4.7	7.4	7.7	10.2

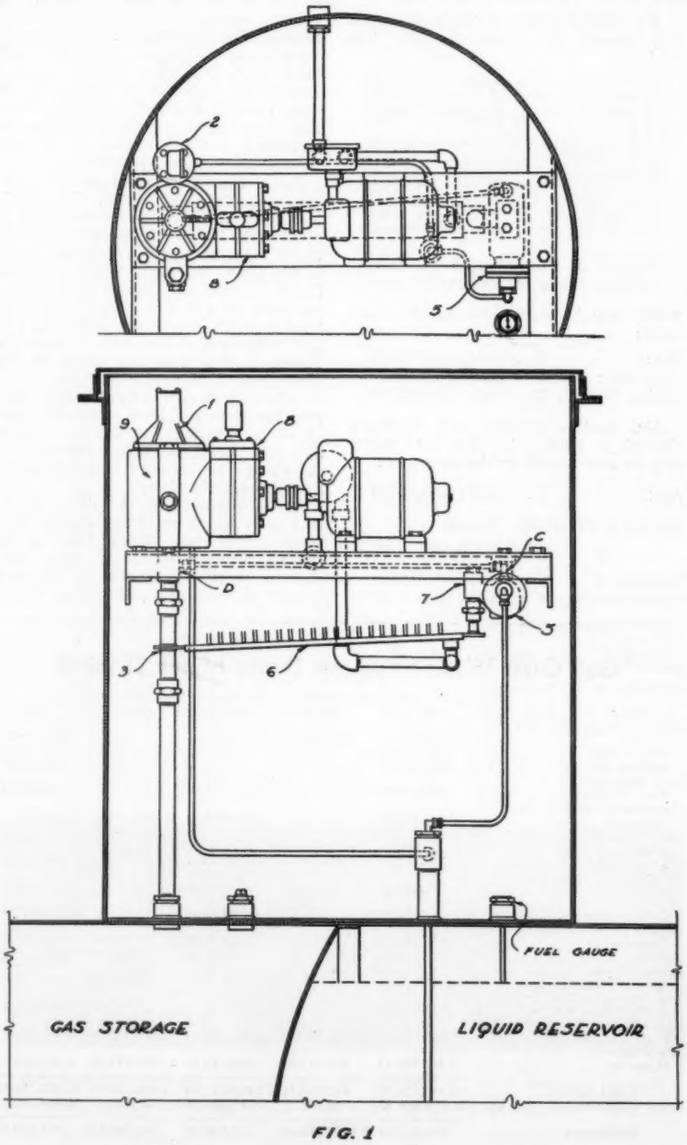


FIG. 1

It is estimated that there are today 5,000,000 families to whom electric service is available but gas is not. This number is growing because electric transmission lines are being extended faster than gas mains. For cooking, such families have to depend on the old laborious wood or coal stoves, on gasoline or kerosene with their drawbacks, or on modern electric stoves or bottled gas installations. For water heating, they have to look to the primitive kettle on top of the stove, or kerosene-burning heaters. Electricity is too costly in general for such service and bottled gas is impractical for it, mainly because of its high cost.

Various individual gas-making machines have been put on the market and limited numbers of them have been sold. These machines produce gas by blowing air through liquid pentane or oversaturated wicks. The latent heat of vaporization is derived from the surrounding ground and incoming air. Consequently, the B.t.u. content of the gas varies considerably with changes in temperature.

It frequently happens that when full load demand is placed on such a machine for considerable time, the refrigerating action attendant upon absorption of heat by the pentane steadily reduces the heat content of the gas and also lowers the temperature so that moisture condenses out of the air and freezes, often paralyzing the machine altogether.

The desire of families for gas is indicated by the fact that almost every home, however humble, is a gas user in communities where gas is available. It is for homes that want gas and are able to pay for it, but at present cannot get it, that the individual gas machine is designed.

The economic limit of size for the gas machine, that is, the gas-making capacity, has not been determined but it can be designed for various capacities. The smallest unit built to date has a capacity of 150 cubic feet of 600 B.t.u. gas per hour, and the largest 1,200 cubic feet. A 150-cubic foot unit will furnish ample gas for all services (except house-heating) in an average small home.

Where very large quantities of gas are required, it would probably prove more economical to build several smaller units rather than one very large one. It is quite feasible to install and connect up one of these generators so that it will supply gas to two or more houses. This has already been done.

Advantage to Public Utilities

The success of this installation suggests an opportunity for utility companies to extend their service, with small investment, into outlying districts where their lines do not reach. Gas companies could install the generator to serve single houses or groups of houses, equip each house with a meter and deliver gas on a therm or per thousand cubic foot basis. Even electric companies might in some cases find it of advantage to promote the use of the individual gas machines in order to increase their electrical load.

The pentane gas can be burned in standard gas stoves and other appliances without any change in the burners.

The machine is built in three units in order to reduce installation cost to a minimum. The units consists of (1) a two-compartment tank on which a cylin-

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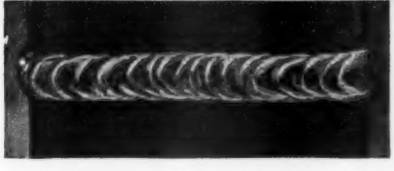

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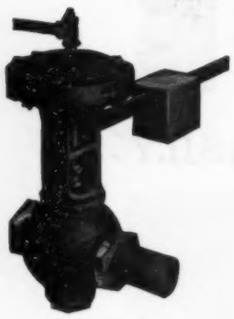

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DISCHARGE pressure cannot rise above the point for which the mechanism is set, if you use the C-F Throttling Regulator. When pressure tends to rise, suction is immediately throttled. Action is prompt, positive, precise, unfailing. Discharge control is definitely accomplished. The C-F Throttling Regulator is one of 40 special types in the C-F line, covering all requirements of pressure control in the gas industry. Complete Catalog mailed on request.

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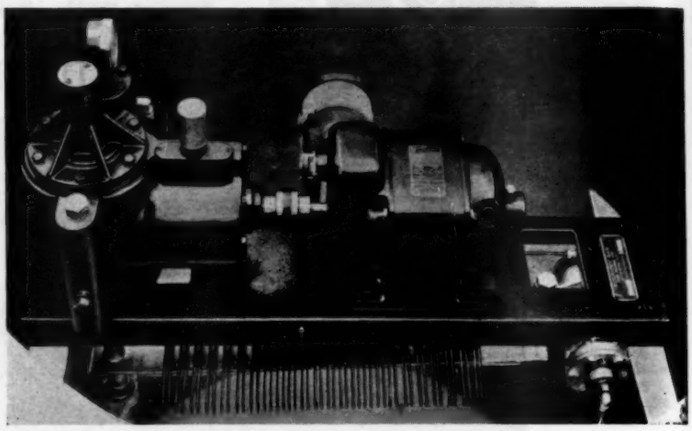
drical dome is mounted to house the machine; (2) the complete gas generating apparatus; (3) the panel board on which are mounted the electric controls. These are shown in the accompanying drawings.

The gas is piped into the house to a standard type pressure regulator under pressure of 2 to 3 pounds. The pressure actuated switch on the panel board is connected to the gas line with copper tubing. This switch controls the operation of the gas generator, automatically starting it at 2 pounds and stopping it at 3 pounds. The pressure in the system is built up by means of a positive pressure blower of special design. In fact it was invented for the purpose, no suitable blower being on the market.



Pentane air-gas generator set in the dome of a two-compartment tank, located outside the building to be served and operated automatically through the control board

Description of Unit

The tank has an absolute seal between the compartments. One-half the tank is for liquid storage, and one half is the gas reservoir. Air from the blower (8) is directed into the chamber (9) in which is located a check valve (2). See Figures 1 and 2.

Air from the chamber (9) is released by relief valve (1).

The purpose of this valve is to maintain a constant pressure in the liquid compartment of the tank. It is this pressure that delivers liquid to the constant level valve (5). Since this pressure is sealed in the liquid compartment by check valve (2) which is located in chamber (9) additional air will be admitted only as the pressure is reduced by consumption of liquid.

The outlet of relief valve (1) is connected to venturi tube (3). Air passing through this tube produces a low pressure at the throat, or point of restriction, due to the increased velocity of the air at this point. The vaporizer (6) is connected with the venturi throat (3) hence the low pressure is communicated to the vaporizing chamber. The vent opening (C) of constant level valve (5) is connected with the high pressure side of relief valve outlet at (D). Consequently, this pressure differential causes liquid to flow into the vaporizer. This liquid flow is proportional to the air volume through venturi throat (3). Thus the proper liquid air ratio through all phases of the operating cycle is maintained.

The vaporizer is maintained at a temperature above the boiling point of the liquid by means of electric heating elements. The pentane entering the vaporizer is transformed into vapor which is drawn off and mixed with the air passing through the venturi tube. The metering orifice (7) controls the flow of liquid to produce a uniform gas mixture of the desired heating value.

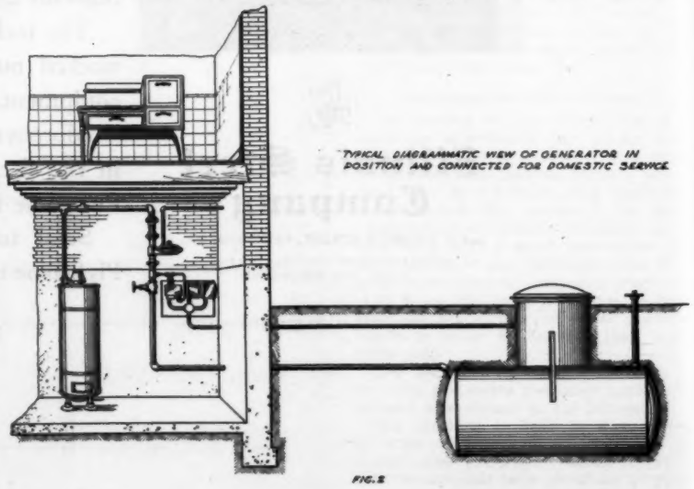
Successful Results

The successful results obtained by this process are accomplished by providing:

1. Controlled flow of liquid into the vaporizer in correct proportion to the air flowing through the venturi tube.
2. The elimination of the difficulties due to the varying hydrostatic pressure caused by the changing of the liquid level in the storage tank as liquid is consumed.
3. The control of the variations of pressure in the liquid compartment caused by natural evaporation of liquid resulting from seasonal ground temperature changes.

Cost Comparison

The costs of operating bottle gas equipment and electric appliances are compared in the following paragraphs with the cost of producing pentane gas in the generator described. While these figures do not take account of the some-



TYPICAL DIAGRAMMATIC VIEW OF GENERATOR IN POSITION AND CONNECTED FOR DOMESTIC SERVICE.

FIG. 2

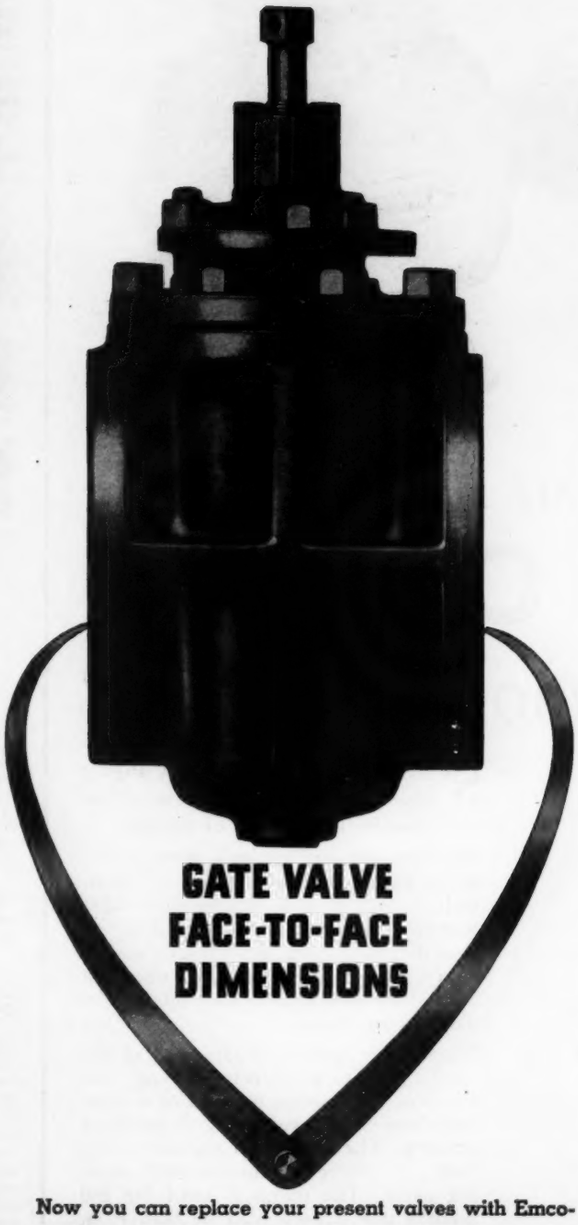
···VALVE REPAIRS AT $5.00 PER MONTH ARE *TOO COSTLY!*

change to EMCO NORDSTROMS *and* SAVE *the difference*

Alert Operators, concerned with the high cost of ordinary valve service, are computing cost of repairs per month.

Several large Companies figure on monthly repair costs at the rate of one dollar per inch per valve. This means $6 per month for a 6" ordinary valve, $12 per month for a 12". One leading Company reports valve repairs at about $5 per month on gasoline distillate manifolds AND since changing to EMCO-NORDSTROM Lubricated Plug Valves has eliminated this exorbitant repair bill—reporting an actual saving of $540 for 12 valves during a nine months' period.

CONCLUSION·· *it's cheaper to install* EMCO NORDSTROMS



Semi-Steel Valve with gate valve face-to-face dimensions. 150 lbs. working pressure. Sizes 5", 6", 8" and 10".

Cast-Steel Valve with gate valve face-to-face dimensions. Worm gear operated. Sizes 6", 8", 10" and 12".

Semi-Steel Valve gate valve face-to-face dimensions. 150 lbs. working pressure. Worm gear operated. Sz. 12" only.

Now you can replace your present valves with Emco-Nordstroms without altering the pipe dimensions. The same face-to-face dimensions are offered. Simply unbolt the old valve and slip in the Emco-Nordstrom. That's economy of installation, to start with. And the economy continues for years to come. Change to Nordstroms. It costs less. The initial cost is competitive to ordinary valves, too, quality and service considered.

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BY ALL MEANS TRY THIS

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SOME people think "Pigs is Pigs"; others think "Pumps is Pumps" but that's hardly fair to pigs or pumps.

Whether you operate bulk plant, refinery or gathering lines you know Pumps well enough to call 'em by their first names (or any others depending on how they act). But we'll wager you've never seen a pump that will stand up and take it *and deliver* like this Oceco Turborotor Pump.

It's simpler and *more efficient*, of the rotary positive displacement type. The pumping mechanism consists of a rotor and three blades revolving about fixed centers. The blades do not rub outer wall . . . . there are no eccentric moving parts. The pump is good for 250 pounds per square inch or higher on special order.

Give this pump a whirl and you'll be as happy, as others have, about its low power consumption and low operating costs. And you'll feel you've got a bargain, too. Tell us what you want to accomplish so we can quote you on the right pump for your purpose.

Accessible

The entire internal mechanism can be removed when the outside flange is removed. No special tools required.

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what higher efficiency obtained with electric equipment, they do indicate a very substantial saving with pentane gas as compared with electricity.

The liquid used for bottle gas is propane which contains approximately 91,800 B.t.u. per gallon. The charge to the average consumer for 1 pound of propane is estimated at 12 cents. Assuming a heating value of 535 B.t.u. per cubic foot, the propane will cost $2.99 per 1,000 cubic feet containing 535,000 B.t.u. Propane has a vapor pressure of 120 pounds per square inch at 70° F., hence the containers used to transport it must necessarily be very heavy.

The heat derived from 1 k.w.h. is 3,412 Bt.u. To obtain 535,000 B.t.u. 156.8 k.w.h. will be required. Taking an average rate of 2 cents per k.w.h., 156.8 k.w.h. (the equivalent of 535,000 B.t.u.) will cost $4.70.

Pentane Gas

The price of pentane at the field is 8 cents per gallon in tank car lots, the freight per gallon from Oklahoma is $.024 making a total cost of $.104 delivered in Chicago. Each gallon of pentane contains 110,500 Bt.u., therefore, 4.84 gallons of pentane will make 535,000 B.t.u.

The following table shows the cost of pentane and electricity to operate the gas generator.

The cost is figured per 1,000 cubic feet of gas (535,000 B.t.u.) at various prices of pentane and with electricity at 3 cents per k.w.h.

TABLE 2

$.15 per gal. f.o.b. Chicago in tank cars	$.82
.20 per gal. f.o.b. Chicago in tank cars	1.06
.25 per gal. f.o.b. Chicago in tank cars	1.30
.30 per gal. f.o.b. Chicago in tank cars	1.54

Pentane develops practically no vapor pressure at ordinary temperature and is transported in No. 5 I.C.C. containers averaging one-quarter pound of metal to each pound of liquid. The increased cost of bottle gas over gas generated by the pentane machine is due to the high cost of transporting the propane to the consumer in high pressure containers.

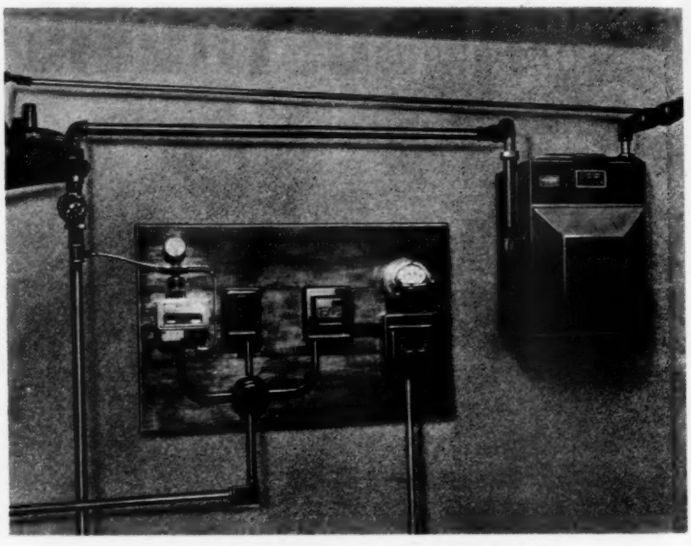


Figure 3—Control board and meters for pentane air-gas generator. At the upper left is the pressure regulator. On the board reading from left to right are the pressure actuated switch, control cut-out switch, electric meter and electric supply switch. The gas meter is shown in the upper right

Some Basic Problems of Pennsylvania Crude Oil

(Continued from Page 51)

pumped to the surface from these sumps. As a rule no attempt is made to recover oil from the actual sand mined. In addition to the 15 per cent recovered naturally, about 45 per cent is recovered by this method leaving 40 per cent unrecovered. The third method entails the drilling of mine wells from various subsurface levels of a mine, the entries of which are driven either above or below one of the principal pay horizons. The oil sand itself is left in place. The method really resolves itself into transferring surface operations to that of subsurface. This method is employed at Pechelbronn and, to a large extent, at Wietze in combination with the subsurface drainage method described above. It is used to reach productive sands not cut by drainage entries. In the United States it is commonly known as the Ranney process. An experimental mine employing this method was put down in the Jacksboro Field, Texas.

Cost and Recovery

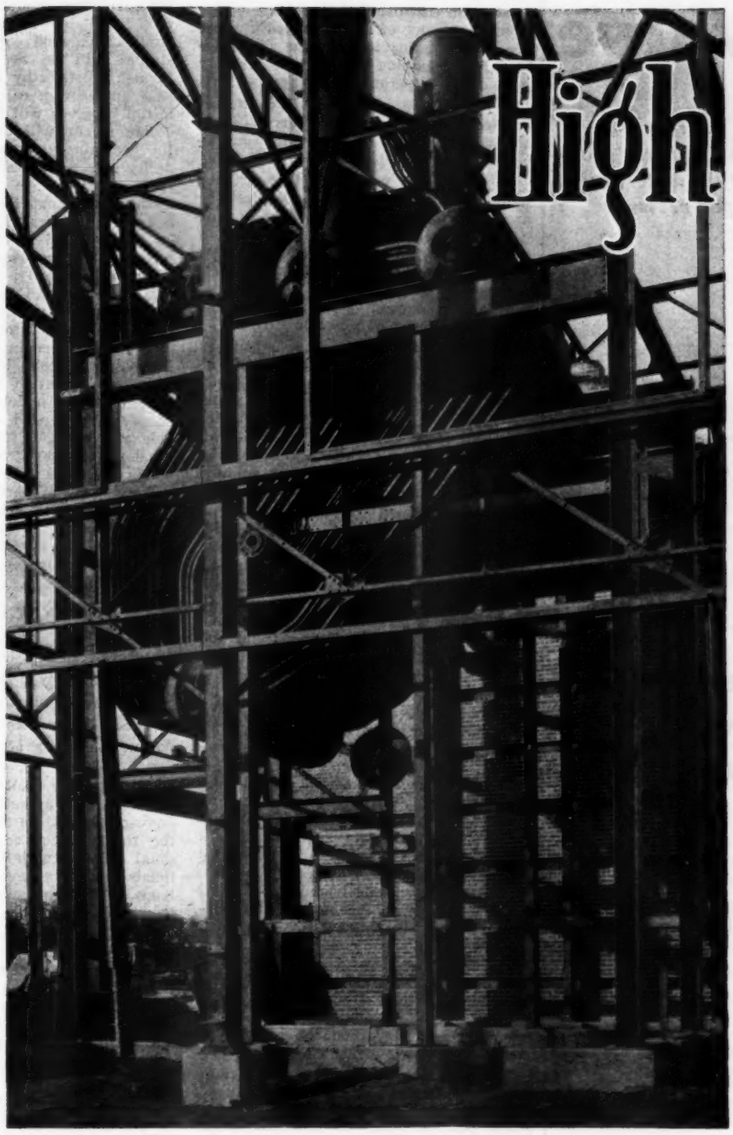
This third method makes possible the exposure of a very large area for natural drainage, and the flow may be augmented by the application of intensive, closely controlled, fluid drives which is not feasible in surface operations. It is the method commonly advocated by petroleum engineers for application to most of the areas which are suitable for mining in the United States. It is expected that the cost of producing a barrel of crude will be lower than that by the European methods because the recovery will be higher. However, we must not lose sight of the fact that any oil mining operation must be very efficient to be profitable, for even under optimum conditions, calculations based on laboratory experiments indicate that 1 ton of Pennsylvania oil sandstone contains only 40 to 50 cents' worth of oil at the present price.

It must be borne in mind that oil mining is a true secondary method of oil recovery. It is entirely unsuitable for areas of high pressure, large gas, or flush oil production. It is not the competitor of the drill in such pools. Its field lies in the economic rehabilitation of the areas which are depleted or semidepleted with reference to present producing methods. Considering Pennsylvania, probably a majority of the reserves previously mentioned in this paper, even those containing much oil, are either in or approach very closely this category. The question naturally arises, whether or not oil mining should replace present methods of production in Pennsylvania.

A scrutiny of the following summary concerning the optimum conditions for oil mining in the United States will show that no region in the country offers more economic, geologic, and operating advantages to oil mining than does the Pennsylvania Grade area:

Summary of Oil Mining Requirements

1. Under favorable conditions, oil mining methods in Pennsylvania may be



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The KENNEDY Fig. 89 Globe Valve

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for better service, longer wear, and easier maintenance

A SPECIALLY interesting new departure in the new Kennedy Fig. 89 Valve is the smooth silvery cadmium plating on the malleable iron union bonnet ring and packing nut. This distinctive finish will not chip off nor be readily marred from wrenches, provides permanent protection against rusting, and a self-lubricating quality on the threads.

This valve opens and closes with particular ease because of a special machined low-friction contact surface between the stem head and the disc holder. Other outstanding features of Kennedy Fig. 89 are:

- Disc holder has four prongs for guidance and to prevent binding
- Raised seat in body is unusually high for longer disc life
- Slip-on disc holder locks at a wide-open position
- Stem has large number of heavy contact threads to reduce wear
- Conical joint between stem and bonnet permits packing under pressure
- Stuffing box is exceptionally deep with molded packing and long gland follower
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commercially profitable. Their application may be instrumental in converting the dubious status of acreage merely containing billions of barrels of oil not otherwise recoverable to a definite reserve of oil of a very tangible value.

2. Under favorable conditions, oil mining methods at depths of from 800 to 1,500 feet may result in a lower unit production cost of oil than surface operation by means of wells drilled for repressuring or flooding, and the advantage in favor of mining may increase rapidly with depth to perhaps 3,000 feet.

3. Favorable strata conditions must be present, both in the reservoir itself and where the shafts and tunnels are to be sunk and driven.

4. Under any conditions there will be limitations to the pressures that can be used in repressuring or flooding from the mine passages because of possible leakage through fissures or permeable places in the shale or rocks in which, or below which, the mine entries are made, or failure of the roof, or upheaval of the floor, or bursting of pipes or fittings.

5. Mining methods are not a primary method of oil extraction but can only be applied to the so-called semi or fully depleted field because inflammable, and sometimes toxic, vapors and gases under pressure would make their use too dangerous for mine workers. Much of the Pennsylvania area, therefore, is suitable from this standpoint.

It will be noted that the above summary states that the application of oil mining methods to the Pennsylvania fields offers certain possibilities and has certain limitations. It would be foolhardy to consider mining for crude oil without first making a thorough comparative study for the future trend and magnitude of the Pennsylvania Grade crude oil industry in relation to that for western oils. This would entail an examination of all competitive markets, transportation facilities, and costs. This study should determine also, the economic, marketing, laboring and geographical phases involved as well as the engineering details before presenting any conclusions. The application of the highest type of petroleum engineering skill and of modern mining principles and equipment would be essential to success. Metallurgical, chemical and geophysical problems would be encountered and geologists would be needed to determine structural and sand conditions. It must be realized that many thousands of dollars would have to be spent in initiating even an experimental mine, and it would be necessary to bring into play every scientific resource at our command to insure the success of such a project.

In considering more closely the hundreds of details that would be involved in mining for oil in Pennsylvania, it would soon be discovered that even a detailed, competent, reconnaissance survey for such a project alone might cost the industry an appreciable sum of money. It is unlikely that any one engineering firm in the country would be equipped with all of the talent and scientific machinery necessary to cover it completely. Fortunately, however, the state has, in its own right, a public institution where under one roof is grouped a nucleus of complemented forces competent to carry on such work.

The simple enumeration of all the factors concerning which knowledge would be required to carry through successfully the proposals outlined here would be too long for this paper. It is sufficient here to say that this is the field of the School of Mineral Industries, that it is a part of its work as a state institution. The school is vitally interested in the production, including mining, of oil in Pennsylvania; it offers its every service in cooperation with the Pennsylvania oil industry, in studying, planning step by step, and carrying out any feasible project which might be initiated.

In conclusion it is important to emphasize the fact that the problems to be solved are difficult and involved because commercial bodies of petroleum do not outcrop at the surface where they can be easily sampled and studied. Also, petroleum, gas and salt water are mobile substances which move underground from place to place as primary production proceeds. These changing relationships in particular complicate the problem of secondary recovery. Until recently our Pensylvania oil fields have not been developed systematically, and there are very little reliable production and geological data available as a guide for future studies. Diamond core drilling and core studies will be necessary in order to furnish trustworthy data upon which to base engineering calculations. Therefore, initial progress will be slow, and considerable money will be needed to finance the preliminary surveys. Since the prosperity of a considerable area of the state will eventually be involved, it would seem proper that the state, through its School of Mineral Industries and other agencies, should be charged with the solution of the problems. But governmental bodies move slowly, and since the Pennsylvania Grade Crude Oil Association realizes the importance now of these basic production problems which the industry must face in the not too distant future, it appears logical for it to assume the initiative in the matter. The projects to be undertaken and the rate of progress, depend on the funds available and these, in the present stage of developments, are very largely in the hands of the oil men of the state.

*Note — In preparing this paper the writer wishes to acknowledge the helpful suggestions of C. A. Bonine, K. B. Barnes, C. B. McClintock, A. C. Simmons, C. C. Hogg and W. F. Clinger.

"AN INTERNATIONAL OIL MAN"

Harper & Brothers, New York, publish a biography of Sir Henry Deterding, head of the Royal Dutch-Shell Co. It is called "An International Oil Man," and in it Sir Henry tells Stanley Naylor, the writer, the story of his interesting life.

Sir Henry, "takes stock of himself," he says, as the head of a large group of oil companies operating in nearly every known country. He tells of the growth of the Royal Dutch company; of his personal contacts with Standard Oil Co. officials and of the search for new oil lands, and new markets for the company's products.

It is a very readable account of a man who started out as a youthful bank clerk in Holland; of his first tough job for the Royal Dutch company as bookkeeper in the Dutch East Indies, and of his climb up the industrial hill and of the interesting things he experienced on the way.

Sir Henry indulges in bits of philosophy here and there as the book progresses. He tells of price wars with powerful competitors, the battles for new markets and the struggles to keep them. The book contains only 126 pages, so there was much of Sir Henry's busy career that must have been omitted. However, there is enough real meat in the book to make it worth reading. The contents were first published in the Saturday Evening Post in serial form.

SIMPSON STRUCTURE TESTS

In southeastern Saskatchewan, Simpson Oil Co. is drilling a series of structure tests on its acreage preparatory to a second commercial test for oil.

A series of structure tests have been drilled on the east portion of the Simpson Oil Co. holdings, where there is apparently a distinct fold. These tests indicate a marked uplift to the east. No. 3 is 64 feet higher than No. 2, a mile south and 393 feet higher than No. 1 salt well 2¼ miles west. No. 3 encountered considerable gas at shallow depth. Two more structure tests will be drilled. The structure testing is under supervision of a Saskatchewan government geologist. Plans are now being made for commercial development of the east structure, and derrick and drilling machinery will be installed as soon as the structure testing program is completed.

Classify Lubricants by Changes in Viscosity

(Continued from Page 10)

was compiled for the benefit of those who are familiar with this system. To provide for the needs of those who require a more minute division, the viscosity-temperature zones have each been divided into 12½ sectors, so that the angles formed between the two extreme basic oils when plotted on the A.S.T.M. chart consist of 100 sectors. The Dean-Davis index numbers are readily converted into zone-sector index values by reference to Figure 3, while Dean-Davis viscosity index values can be calculated from the viscosity zone-index chart (Figure 1).

According to Dean and Davis[1,2] the viscosity index of an oil can be calculated by the equation:

$$V.\ T. = \frac{L - U}{L - H} \times 100$$

where V. I. = viscosity index
U = Viscosity at 100° F. of the oil in question.
L = Viscosity at 100° F. of the Series L oil, having the same viscosity at 210° F. as the given oil.
H = Viscosity at 100° F. of the Series H oil, having the same viscosity at 210° F. as the given oil.

Series L (V.I.0) oils and Series H (V.I. 100) oils are indicated by two curves in Figures 1 and 2 (viscosity-temperature zone index chart), the Series L being the heavy upper line of Zone 7 and the Series H being represented by the heavy base line of Zone 0. Therefore, all values required for calculating the Dean and Davis viscosity index can be taken from this chart.

Example: Given an oil, viscosity (Saybolt Universal) at

210° F. ..... 90″
130° F. ..... 497″
100° F. ..... 1,380″

Find:

(a) Dean & Davis viscosity index value applying formula at 100° F.

(b) Viscosity-temperature zone-sector index value.

(a) Figure 1 (viscosity-temperature zone-index chart) shows the oil falling in the Zone 3 classification.

Value of L = 2115, H = 986
(Approximately 2115 and 985 reading to the nearest figure on the chart)

Using the foregoing formula, the Dean and Davis index is calculated at 65.

(b) Using conversion table, Figure 3, the Dean and Davis index 65 is shown as falling in Zone 3, Sector 51 (Z3-51).

Gravity and Viscosity Zone-Index

Another regularity in the physical properties of lubricating oils was found by plotting their specific gravities[14] (reduced to a standard temperature) as functions of their viscosities at the two temperatures of 100° F. and 210° F. According to Hill and Coates[15] and Hill and Ferris[16] this relation exists between viscosity and gravity for oils of any one particular type. The particular merit of this inter-relation is that it lends itself readily to graphical representation, as will be seen by referring to the viscosity-temperature zone index chart (Figure 1). The calculated A.P.I. gravities at 60° F. have been inserted for the corresponding viscosity-temperature zone viscosities at 100° F. It should be borne in mind, however, that these gravity curves represent the mean values and therefore, allowances in the A.P.I. gravity determinations must be made to the extent that in a few extreme cases the deviation may amount to approximately 1 degree either way.

However, knowing the A.P.I. gravity at 60° F. and one viscosity (Saybolt Universal) at 100° F., or at 130° F., or at 210° F., classifying any unknown lubricating oil according to its viscosity-temperature characteristics, its base or its S.A.E. number can be accomplished with a fairly high degree of accuracy through the use of the viscosity-temperature zone index chart.

HOW TO USE THE VISCOSITY BLENDING AND DILUTION CHART

This chart is an extension of the VISCOSITY-TEMPERATURE CHART, A.S.T.M. Tentative Standard D341-32 T.

Quoting from the A.S.T.M. Report of Committee D-2, 1932, page 261:

"... this viscosity-temperature chart furnishes a convenient means for estimating the viscosity at a given temperature of blends of petroleum liquids, provided viscosities of the component liquids at the given temperature are known. ... Plot the known viscosities of the two components on the proper lines at points corresponding to the values on the viscosity scale, and draw a straight line through them. Points on this line show viscosities at the given temperature of blends of the particular components, depending upon the proportion of the light and heavy component.

"Example: As an example, estimate the viscosity of a blend of 15 percent of an oil having a viscosity of 38 seconds, Saybolt Universal at 100° F. and 85 percent of an oil having a viscosity of 153 seconds, Saybolt Universal at 100° F. ... a straight line (a straight edge being sufficient for the purpose) between the 38 seconds Saybolt Universal point (left) and the 153 seconds Saybolt Universal point (right) crosses the 85 percent line (of the heavy component) and the 15 percent line (of the light component) at a value corresponding to 105 seconds. Thus the estimated viscosity of the blend is 105 seconds, Saybolt Universal at 100° F." NOTE: "The experimental value was 108 seconds."

In case one of the components is kerosene, plot the corresponding point (left) and the viscosity point of the heavy component (right). Points on the straight line between these two points show viscosities of blends of kerosene and oil whether motor or transmission at the same temperature as the components.

DILUTION: Knowing the original motor oil viscosity, the percentage of dilution can be found by a line between the motor oil viscosity (right) and the fuel used (left). The intersection of this line with the viscosity line of the used oil shows the percentage of dilution.

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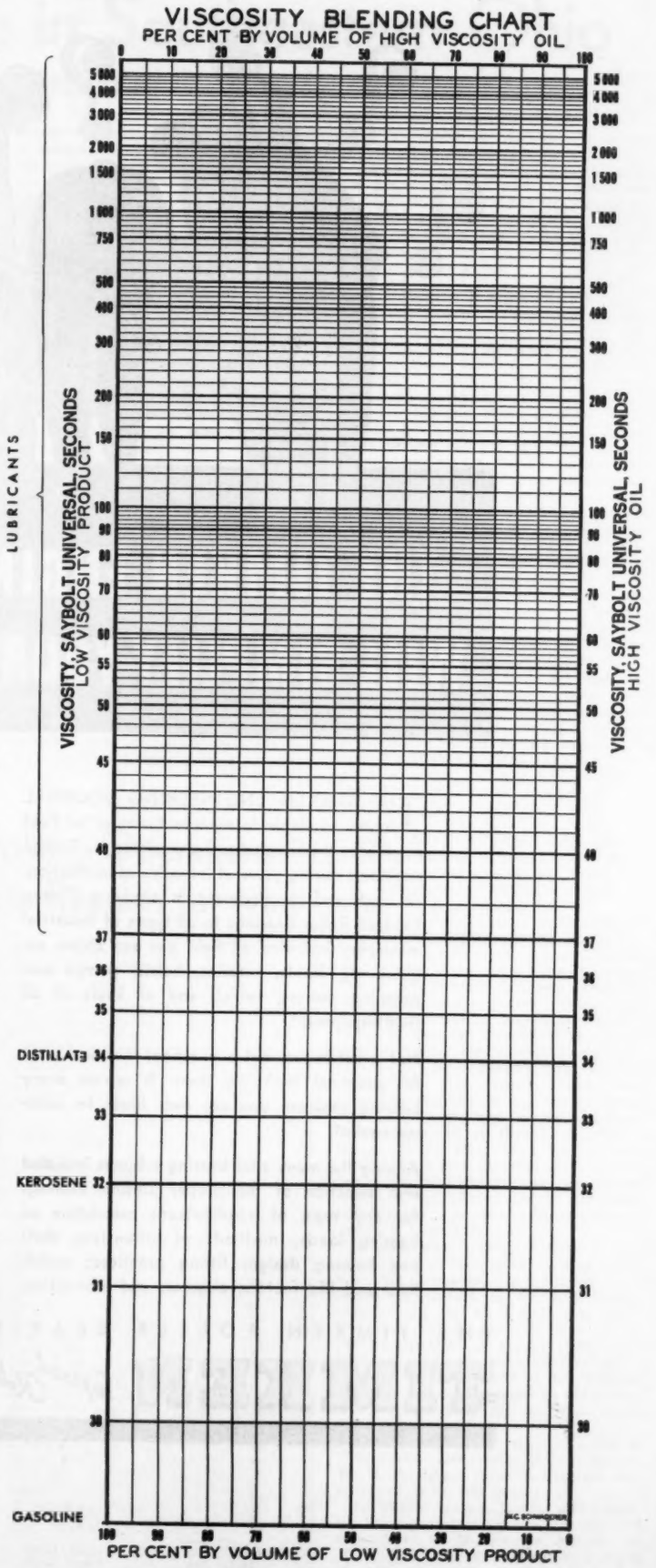

Fig. 4—Viscosity blending chart

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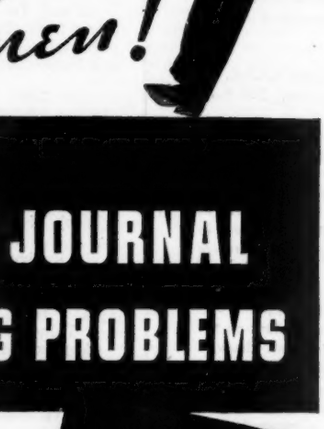

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TIMKEN *Tapered Roller* **BEARINGS**

10179

Twenty-four Completions in the Eastern Fields; Most New Production in Southeastern Ohio

By STAFF CORRESPONDENT

PITTSBURGH, Pa., June 18.—The lower Eastern fields presented considerable activity during the week with 24 completions and 1 dry hole. Twelve were producers with an initial production of 160 bbls. and the remainder gas wells, among which were some fair tests.

In Center district, Gilmer County, West Virginia, No. 1 on the A. H. Blackshere farm, which was drilled deeper from the Salt sand down to the Berea sand by Godfrey L. Cabot, Inc., and made a heavy initial flow, continued as a fair producer and averaged in excess of 300 bbls. a day during the week. About 1,000 feet from this well, Hope Construction & Refining Co. completed No. 3,569 on the Mary A. Stump farm at a depth of 2,445 feet but in the Salt sand as a gas well. It tested about 350,000 feet of gas a day.

In this district, about 700 feet north of the heavy producer, Hope Construction & Refining Co. has started to drill deeper No. 1 on the Leola Blackshere farm from the Injun sand to the Berea sand unless other pay intervenes. The same company has made a location for No. 2 on this farm about 285 feet northeast of the Cabot well. In this district, McCall and others are cementing a cave on the E. G. Rohrbaugh farm at a depth of 1,680 feet.

SOUTHEAST OHIO

Most of the new production again was located in Southeast Ohio. The largest well for the week was No. 4 of Preston Oil Co. on the William and Maude Frazee farm in Section 5, Perry Township, Coshocton County. It was drilled in the Clinton sand at a depth of 3,230 feet and produced 75 bbls. the first day after shot.

In Athens County on Hamley Run in Section 12, Waterloo Township, Elliott Oil Corp. and others completed a second test on the Winifred Goodin farm in the Grit at 1,020 feet. It produced 3 bbls. the first day after shot.

In Belmont County, William Patton and others completed a second test on the E. J. Pfeffer farm in the NW Section 34, Somerset Township. It was drilled in the Grit at a depth of 1,700 feet and is making about 100,000 feet of gas a day along with about a half barrel of oil.

In Medina County, there were three completions. In the northwest corner of Lot 2, Chatham Township, Oko Oil & Gas Co. completed No. 43 on the Jesse McVicker farm in the Berea grit at 478 feet. It produced 15 bbls. the first day after shot. On Tract 16, Lot 5, Preston Oil Co. completed No. 22 on the Bertha B. and J. J. Parent farm in the same formation at 295 feet. It produced 12 bbls. the first day after shot. On Tract 15, Lot 12, E. R. Edson & Son Co. completed No. 47 on the Ed G. Miller farm in the Berea grit at 488 feet. It was good for 10 bbls. the first day after shot.

In Noble County, in the old Chaseville Pool in well defined limits in the NE Section 18, Seneca Township, C. W. Rich and others drilled No. 1 on the Henry Murphy farm showing for a 2 or 3-bbl. pumper after shot.

In Vinton County, William Beckley drilled a second test on his own property near Bollins Mill in Section 3, Knox County, in the grit at a depth of 1,010 feet. It produced 1 bbl. the first day after shot.

WEST VIRGINIA

There were three producers completed in West Virginia, one in Lost Run Pool, Clay district, Ritchie County. Here, Richards Farm Oil Co. completed No. 6 on the Frank R. Ball farm in the Injun sand streak at a depth of 2,016 feet showing for 20 bbls. a day. The head appears definitely off this pool yet the wells are still good producers and have shown remarkable staying power. There is still drilling in the limits found. Richards Farm Oil Co. is at 1,240 feet in No. 7 on the Frank R. Ball farm. Hinton Farm Oil Co. has reached 1,235 feet in a second test on the Edgar Hinton farm. Ridgeway and others are down 900 feet in a second test on the Catherine Ball lease. Robert E. Elder has started drilling his test on the J. W. Leonard farm and is beyond the 700-foot level.

In Clay district, Ritchie County, about 1½ miles north of the Lost Run Pool, Claude Cottrell and others completed a test on the Lillie Riggs farm, mapped as the M. S. Riggs, through the Big Injun sand, showing for between 8 and 10 bbls. a day. The location is about 250 feet north of the producer on the L. H. Hanlon farm.

On Patrick Creek, in Butler district, Wayne County, Huffman Oil & Gas Co. completed a test on the Albert Ronk farm in the Berea sand at a depth of 1,955 feet. It will make a 7-bbl. pumper. The location is 3,500 feet southeast of Chartiers Oil Co.'s test on the Oliver Weirs farm.

Gas Wells

There were two gas wells completed in Boone County. The larger was the test of Godfrey L. Cabot, Inc., on the Henry Keadle farm in Washington district, drilled in the Big Lime at 1,717 feet. It is showing for 1,500,000 feet a day. In the same district, Pond Fork Oil & Gas Co. completed No. 17 on the Cole and Crane lease in the Berea sand at 2,178 feet and it gauges close to 250,000 feet a day.

In Cabell County there were three completions. In Guyandotte district, May Gas Co. completed a test on the G. I. Neal farm in the Brown shale at 2,781 feet and after shot it gauged 1,750,000 feet a day. In this district, United Fuel Gas Co. completed No. 4,389, a test on the J. W. Starkey lease, in the Brown shale at 3,019 feet. It will make a small well. In McComas district, Madison Gas Co. completed a test on the Wade H. Holton farm in the Injun sand at 1,593 feet showing over 750,000 feet a day.

In Doddridge County, on Arnolds Creek in Central district, J. J. Graham completed a test on the W. H. Pigott heirs farm in the Injun sand at 1,800 feet. It is a small gas well with no showing of oil.

In Gilmer County, two fair gassers were completed in DeKalb district. Starcher and Richards completed a test on the O. C. McQuain heirs farm in the Injun sand at 2,181 feet and it gauged 786,700 feet a day, natural. In the same district, McCall and others completed No. 3 on the Lee Gainer farm in the Injun sand at 1,838 feet and it gauges over 500,000 feet a day, natural.

In Ritchie County, Howard Robinson drilled a test on the William Flanigan farm in Clay district through the Injun sand at a depth of 1,738 feet. It proved dry in all formations.

In Roane County there was the largest gas well of the week. In Smithfield district, Sand Fork Oil & Gas Co., R. L. McCulty in charge, completed a test on the O. M. Young farm in the Injun sand at 1,838 feet showing for about 3,000,000 feet of gas a day.

Drilling in West Virginia

In Boone County, Pure Oil Co. has three wells drilling. In Sherman district, No. 66 on the Federal Coal Co. tract is down 2,280 feet, and No. 67, 905 feet. No. 260, on the Williams Coal Co. lease, is drilling at 785 feet. This company has part of the material on the ground for a second test on the Lafollette, Robson and Prichard Tract C, and a rig standing for No. 68 on the Federal Coal Co. tract. All are in Sherman district. Godfrey L. Cabot, Inc., has two drilling in this district. No. 53 on his lease of the Federal Coal Co. has reached 2,375 feet, and No. 3 on the J. Q. Dickinson farm is down 1,350 feet. Same operator has rig standing for No. 54 on the Federal Coal Co. lease and, one for No. 3 on the Central Trust Co. property. In Washington district, his test on the Sidney White farm is shut down at 1,388 feet with a fishing job for lost tools.

In Cabell County, there are two new operations both in McComas district. H. H. Baker Gas Co. is rigging up on the Augusta Beckett lease and West Virginia Gas Co. is moving in the tools for a second test on the John J. Porter farm. In this district, no other wells are drilling. In Barboursville district, United Fuel Gas Co. is building a road to a location for No. 4,390 on the J. W. Starkey farm. In Guyandotte district, Leonard Paugh has reached 2,400 feet on his own property and Guyan Valley Gas Co. is testing shale at 2,873 feet on the Colored Children's Home.

In Calhoun County, Mudlick Oil & Gas Co. is spudding a second test on the Almeda Meadows farm in Lee district. Jarvis and Ayers are moving in material on the Roanna Robinson farm. In Washington district, Ohio Valley Gas Co. has material on the N. L. Norman farm. In Sherman district, F. F. McIntosh is drilling a fifth well, No. 4 location, on the O. S. Bennett farm and has reached 700 feet. Robert Fowler and others are drilling on top of the Injun sand in a second test on the Lafayette Stump farm. H. B. Scott is building a rig on the P. Fling heirs. In Sheridan district, Cain and Rothwell started drilling on the Hale Knight farm and reached 200 feet. In Center district, Starcher and Richards are down 1,020 feet on the James Wilson farm.

In Kanawha County, Godfrey L. Cabot, Inc., is drilling three wells. His No. 6 on the Campbells Creek Oil Co. lease is down 2,275 feet. On the A. D. Huntington lease, No. 43 is drilling at 2,077 feet, and No. 44 at 1,535 feet, all in Malden district. A rig has been completed for No. 45. Pure Oil Co. has a rig standing for No. 254 on the Williams Coal Co. tract and material on the ground for No. 255. Both are in Cabin Creek district.

In Lincoln County, Kanawha Gas & Utilities Co. has started drilling on the W. S. Snodgrass farm in Sheridan district and is at 200 feet.

In Marion County, Monroe and Laughlin have started drilling on the Howard Rice farm in Mannington district. In Marshall County, Manufacturers Light & Heat Co. has reached 2,235 feet in No.

(Continued on Page 89)

Large Increase in Drilling Operations in Many Fields Shown in Reports for May

The summary of completions and new operations in May indicated that during the month 1,713 new drilling operations were started in the fields east of California. Compared with May, 1933, this is a tremendous gain, because in that month only 698 new wells were started.

The May, 1934, report shows an increase of 307 in completed wells but also an increase of 187 in drilling wells at the close of the month, compared with April, 1934.

Compared with the status of field work in April, May's totals of rigs and wells drilling at the close of the month showed an increase as follows: Eastern fields 53, Central Ohio 20, Michigan 42, Kansas 40, Oklahoma 16, North Central Texas 64, East Texas 60, Gulf Coast Louisiana 31, Arkansas 10, Montana 9, these being the most important gains.

Compared with April the Gulf Coastal Texas Field showed a decline in rigs and wells drilling of 29; North Louisiana 19, Panhandle Texas 20, Wyoming 4, and Colorado 8.

Altogether the rigs increased 66 and wells drilling 187, or a net increase of 253 in rigs and wells drilling.

Following are the figures for May:

SUMMARY OF ALL FIELDS

Completions

	Comp.	Prod.	Dry	Gas
Eastern Fields	209	703	14	24
Lima	7	114	1	1
Central Ohio	50	332	13	22
Indiana	13	280	6	2
Illinois	3	5	2	0
Kentucky	14	300	5	1
Michigan	46	24,105	11	5
Kansas	45	16,039	10	2
Oklahoma	149	71,097	37	11
North Central Texas	252	23,110	10[illegible]	9
West Texas	37	122,763	6	1
Panhandle Texas	27	10,327	1	5
East Central Texas	14	291	8	0
East Texas	314	16,232	4	0
Southwest Texas	115	24,232	53	9
Gulf Coast Texas	140	65,844	49	3
East Texas (gas area)	0	0	0	0
Gulf Coast Louisiana	25	17,004	8	0
North Louisiana	31	1,445	17	1
Arkansas	1	0	1	0
Mississippi	3	0	3	0
Montana	9	644	2	0
Wyoming	10	1,260	2	1
Colorado	2	5,000	1	0
New Mexico	10	14,134	0	1
Total May	1,526	415,261	359	98
Total April	1,219	318,314	262	72
Difference	307	96,947	97	26

Rigs and Wells Drilling

	Rigs	Drlg.	Total
Eastern Fields	77	219	296
Lima	3	25	28
Central Ohio	42	125	167
Indiana	1	36	37
Illinois	2	11	13
Kentucky	3	39	42
Michigan	117	162	279
Kansas	44	166	210
Oklahoma	115	409	524
North Central Texas	95	236	331
West Texas	30	110	140
Panhandle Texas	50	118	168
East Texas	90	307	397
East Central Texas	21	33	54
Southwest Texas	26	127	153
Gulf Coast Texas	29	152	181
East Texas (gas area)	3	12	15
Gulf Coast Louisiana	20	96	116
North Louisiana	45	92	137
Arkansas	14	34	48
Mississippi	4	14	18
Alabama	0	1	1
Montana	10	52	62
Utah	1	14	15
Wyoming	14	66	80
Colorado	6	34	40
New Mexico	9	59	68
Total May	871	2,749	3,620
Total April	805	2,562	3,367
Difference	66	187	253

New Shows of Oil and Gas in Widely Separated Michigan Wildcats Feature of Developments

By PAUL A. ELLIOTT
Staff Correspondent, Michigan Fields

MUSKEGON, Mich., June 18.—For a second successive week 9,000 bbls. of new initial production was added to Michigan's record last week by six new completions and a remarkable increase resulting from acid treatment of a seventh well previously drilled into the Dundee pay. In addition, three gassers aggregating about 5,500,000 feet a day were completed in the Broomfield-Sherman Township area in Isabella County. Three other wells were drilled into the oil pay and were to be treated and tested before being completed. New shows of oil and gas were encountered in four widely separated wildcats while two Central Michigan areas witnessed new developments indicating an active play.

Twelve permits were issued in nine townships of six counties including Central, northeastern and southeastern Michigan. Five prospective locations were announced for central and southeastern sections.

The completions include six oil wells, four in Porter Township, Midland County, one in Greendale Township, Midland County, and one in Vernon Township, Isabella County. The new gassers include two in Broomfield and one in Sherman Township, Isabella County.

Half of the new initial oil production of 9,000 bbls. a day is represented by the six new wells, while the other half was added by treatment of a single well.

J. S. Braden's No. 2 William McCallum, SE SE SE Section 20-13n-1w, jumped from an initial of about 50 bbls. a day natural to about 800 bbls. after treatment. This was later increased to 5,300 bbls. a day.

Completions

The largest of the completions was Fred Turner and others' No. 2 George Root, SE NE SW Section 21-13n-1w, Porter Township, which made an estimated 3,100 bbls. daily after drilling into the Dundee from the top of the limestone at 3,370 feet to a total of 3,395 feet. Fred Turner and others B No. 1, NE SE SW Section 21, which topped the Dundee at 3,359 feet, struck the first pay at 3,390 feet and drilled to 3,413 feet where it came in for about 700 bbls. a day. Strange Oil & Gas Co.'s No. 6 Sam Walley, NE SW SE Section 16-13n-1w, made about 635 bbls. in the first 24 hours. Dundee was topped at 3,362 feet and the hole bottomed at 3,414 feet. Pure Oil Co.'s No. 2 Everett Kleinhana, NW SE NE Section 20, will make about 45 bbls. a day after topping the Dundee at 3,420 feet and finishing at 3,433 feet. Other small wells are Pure Oil Co.'s B No. 2 Joseph Novak, Greendale Township, NE NE NE Section 18-14n-2w, rated at 50 bbls. a day and Jasmid Oil Corp.'s No. 1 Wexensky, NW NW SE Section 30, Vernon Township, Isabella County, and Mellon-Pollock Oil Co.'s No. 2 Leo Smock, NW NE Section 26, Vernon Township, rated at 25 bbls.

The Novak well made record time drilling to 3,575 feet in 25 days' actual drilling time, not including Sunday shutdowns and the period allowed for cemented casing to set. Mellon-Pollock's No. 2 Smock topped the Dundee at 3,713 feet and struck water with the oil at 3,752 feet, plugging back for an estimated production of 25 bbls. a day.

Two wells drilled into the Dundee with several hundred feet of oil in the hole and preparations being made to treat with acid were C. W. Teater and William P. Kales' No. 1 Frank Neitzke, NW NW NE Section 28-13n-1w, Porter Township, and Pure Oil Co.'s A No. 3 J. W. Holmes, NW SW NW Section 8-14n-2w, Greendale Township. The former topped the Dundee at 3,378 feet, cased at 3,384 feet and drilled to 3,432 feet, while the latter had oil in the hole at 3,582 feet.

Two older wells also reported a considerable increase in production, one through acid treatment and the other through cleaning operations. The former is Empire Oil & Refining Co.'s No. 1 Mabel Finch, Section 21, Porter Township, and the latter is Burland and Travis' No. 1 Macomber, Section 19, Greendale Township, boosted from an initial 10 to 20-bbl. pumper brought in last December to daily production of about 100 bbls. in the Dundee.

Gas Wells

All three new gassers completed last week in the Michigan sands are in the Broomfield-Sherman Township area, Isabella County. The largest is Youmans-Burke Oil & Gas Co.'s No. 1 William LaFever, C SW NW Section 32-15n-6w, Sherman Township, near the same concern's No. 1 Chaffee, completed two months ago with an open flow capacity of 4,000,000 feet a day as a 1-mile northwest extension of the Broomfield Pool. The new well came in for 2,800,000 feet a day.

Previous to completion of this second well in the Sherman Township extension, Guy M. Obenauer's No. 1 J. Diehl, C SE NE Section 15-14n-6w, Broomfield Township, Isabella County, had been completed with an open flow capacity of about 2,000,000 feet a day from Michigan pay sands encountered at 1,343-52 feet. The Diehl well extends the Broomfield Pool a short distance southeast. R. L. Hill's No. 1 Keeler-Mitchell, NW NW Section 9, also Broomfield, made about 700,000 feet of gas daily in the same sands.

Completion of these three gas projects left only three drilling wells in the area, including Isabella Oil Development Co.'s No. 3 Bartlett-McClintic, NW SE Section 3, Broomfield, now more than 2,000 feet on the way to test the Dundee for oil; same company's No. 1 Viola Wolfe, NW SE Section 2, Broomfield, and George Hanners' No. 2 Keeler-Mitchell in Section 9, drilling below 600 feet. Youmans-Burke Oil & Gas Co. is planning to drill several more tests in Sherman Township.

Nearly 60 wells were on the active drilling list this week in the Porter Township district.

More drilling is anticipated on the south and east edges of the Porter Township area as the result of extension tests, including Pure's No. 1 Hicks in Section 14, east of the main pool, and Sun Oil Co.'s No. 1 Frederick, Bradner-Vaughan Development Co.'s No. 1 Brennan, Section 27, and Fred Turner's No. 1 Megill in Section 28. The last three wells form a considerable south extension. Two semi-wildcats about a mile ahead of production are drilling: McClanahan Oil Co.'s No. 1 Oliver, in Section 23, and James P. McHugh's No. 1 State Bank, Section 29. More than 100 wells have been completed in Midland County since January 1, 96 in Porter Township, with an aggregate flush production of 96,000 bbls. a day.

Wildcat Areas

The Mecosta-Montcalm trend and the Denver area near the Leaton Pool in Vernon Township, Isabella County, were in the spotlight as the week closed. The Mecosta-Montcalm development took the lead with about 15 wells drilling, spudding or moving in and half a dozen others scheduled. New wells are being spotted every week along a 30-mile trend extending from the Austin Township gas pool on the northwest to Crystal Township on the southeast. Development in Mecosta County centers about recent successes for natural gas in large quantities in the shallow Michigan sand ranging from 1,300 to 1,500 feet.

Columbia Oil & Gas Co.'s No. 1 Albert J. Dutmers, Section 23, Hinton Township, brought in about a month ago with an open flow capacity of 7,500,000 feet, now is believed to have opened a new Michigan gas pool, in the opinion of members of the state geological staff. It is about 10 miles southeast of the Austin Township, Mecosta County Pool, and is on the general trend now being tested.

In Home and adjacent townships of Montcalm County operators are drilling for upper Traverse oil already developed in commercial quantities in the Daily Crude Oil Co.'s two Christensen wells in Section 10, Home Township, with daily potentials of more than 1,000 bbls. each. Natural gas also has been encountered in Richland Township, Montcalm County, where further drilling is in progress.

Old Dutch Oil & Gas Co. has derrick up for its No. 1 Forgar, NE SE NE Section 11-12n-7w, Belvidere Township.

Two projects rigging up include Winter and Miller's No. 1 Durbin, NW NE Section 11-10n-5w, Crystal Township, several miles southeast of the Home Township producers, and Tope, Blunt & Voorhees' A No. 1 Neff's Ranch, SW SE NW Section 22-11n-6w, Day Township, Montcalm County.

Columbia Oil & Gas Co. has moved in for its No. 1 Edna Hutchinson, C SW SW Section 14-13n-8w, Hinton Township, Mecosta County, another gas test.

Taggart Brothers, Inc., are about ready to start their No. 7 on the J. M. McKeough lease, C SW Section 2-14n-9w, Austin Township, Mecosta County. The hope is this well will prove sufficient reserves for the American-Michigan Pipe Line Co. to start its proposed 55-mile line to Muskegon.

F. Irwin Bryan and Harry T. Martin's No. 1 Virgil V. and Mina I. Sheets, NW SE NW Section 35-13n-7w, Milbrook Township, Mecosta County, has started drilling with a rotary rig.

Four other locations were announced: Daily Crude Oil Co.'s No. 1 Gustavson and others, SE NW SW Section 2, Home Township; Mammoth Petroleum Corp.'s No. 1 Lucy E. Thomas, NW SW SE Section 11, Home Township; Atha Oil Co.'s No. 1 Davenport, SE NE Section 10, Ferris Township, and Robins, Gor-

(Continued on Page 77)

Thirteen Completions in Central West; Two More in Wyandot County, Ohio

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

FINDLAY, Ohio, June 18.—Two wells were completed in the Lima Field, both in Wyandot County. Newcomber and others' No. 1, on the Ethel Bennett farm, Section 32, Tymochtee Township, produced 3 bbls., at 1,362 feet. George & Co. are drilling on the David Gibson farm in the same section and Leister & Co. are drilling on the Ella Walton farm, Section 33, same township. In the same county, Mifflin Oil & Gas Co. drilled a dry hole on the Charles Ralls, Jr., farm, Section 7, Crane Township, at 1,421 feet. Jones & Coyle are drilling No. 8 on the Margaret Brillhardt farm, Section 28, same township.

In Hardin County, Kenton Oil & Gas Co. has a rig for an important test on the John McMahon farm, Section 17, Pleasant Township. Cottonwood Oil Co. is drilling No. 2 C. L. and S. A. Sinift, Section 11, Marion Township.

In Ottawa County, Charles Sheelt has a rig for No. 2 on the William Kuhlman farm, Section 14, Harris Township, close to the town of Elmore.

Charles Shell is drilling on the C. C. Waggoner farm, Section 13, Sandusky Township, Sandusky County.

CENTRAL OHIO

Some fairly good sized oil wells were completed in the Central Ohio fields. There were 13 completions reported, of which 6 proved to be paying oil producers, 2 were dry holes, and 5 gassers. The combined new daily production amounted to 225 bbls.

The largest producer was Blue Rock Oil Co.'s No. 3 on the Rachel Freece farm, Section 14, Fallsburg Township, Licking County, which showed an initial production of 93 bbls. in the 2,983-foot sand. No. 4 on this same farm is a rig. Upham Gas Co. is drilling No. 3 on the Charles M. Babcock farm, Section 14, same township. Oil Fuel Gas Co. completed a small gasser in an initial test on the James Kaiser farm, Section 22, Mary Ann Township, at a depth of 648 feet. In Franklin Township, Wehrle Gas Co. completed a dry hole in No. 2 on the Thomas Smith farm, Section 1, at 2,922 feet. In Perry Township, Ridgeway & Co. is drilling No. 4 on the Bessie Hoyt farm, Section 12.

In Athens County, Lodi Township, Ohio Fuel Gas Co.'s No. 1, on the W. H. Parmiter farm, Section 11, showed for a light gasser at 1,782 feet. In Waterloo Township, Standard Natural Gas Co. has a 4-bbl. oil producer at a depth of 1,020 feet in No. 2 on the Almeda J. Young farm.

Muskingum County reports a 30-bbl. producer in Pure Oil Co.'s initial test on the Oscar Mikesell farm, Section 7, Jackson Township, at a depth of 3,200 feet.

In Medina County, Chatham Township, Preston Oil Co. has a 12-bbl. starter in No. 22-1,551 at 295 feet on the J. J. Parent farm, Lot 5. No. 23 on the same lease is drilling ahead.

Two gassers were reported in Meigs County. In Rutland Township, Joe Rubin's No. 1 Nora Smith farm, Section 4, was completed at 903 feet. In Salem Township, A. N. Bengel's No. 1 Ida M. Heacock is a fair gas well at 2,749 feet. The latter well is located in Section 24.

In Stark County, East Ohio Gas Co.'s No. 2, on the Charles Warsler farm, Section 14, Plain Township, is a gasser

(Continued on Page 77)

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Among Gulf Coast Drilling Contractors

One of the most interesting operations starting in the general Gulf Coast area, on which Gholson Drilling Co. is now rigging up, is a 6,000-foot Ellenberger Lime test in Bandera County, about 80 miles northwest of San Antonio, and approximately 25 miles from Bandera. This test will be known as No. 1 R. D. Garrison and will be drilled jointly by Peerless Oil & Gas Co. and Gholson Drilling Co. Cable tools will be used instead of the conventional rotary rig, and cable tool men to handle the job are being recruited from north and west Texas. Gholson Drilling Co. owns a number of strings of cable tools. The test is the outcome of considerable geological work which has been done recently, in which several interesting structures were defined. No. 1 Garrison will be the third test drilled in Bandera County, previous wells having been drilled by the Humble Oil & Refining Co. and the Woodtex Oil Co. Three crews will be used on the job, each crew consisting of a driller and a tool dresser. A steam rig will be used, the boilers to be fired with crude oil.

Rutherford Drilling Co. is moving in a rotary rig in the new Vanderbilt Field to drill a test for the Encino Gas Co. The same company has rig on location at Van Vleck, near Bay City, preparing to drill a second test for the Skelly Oil Co.

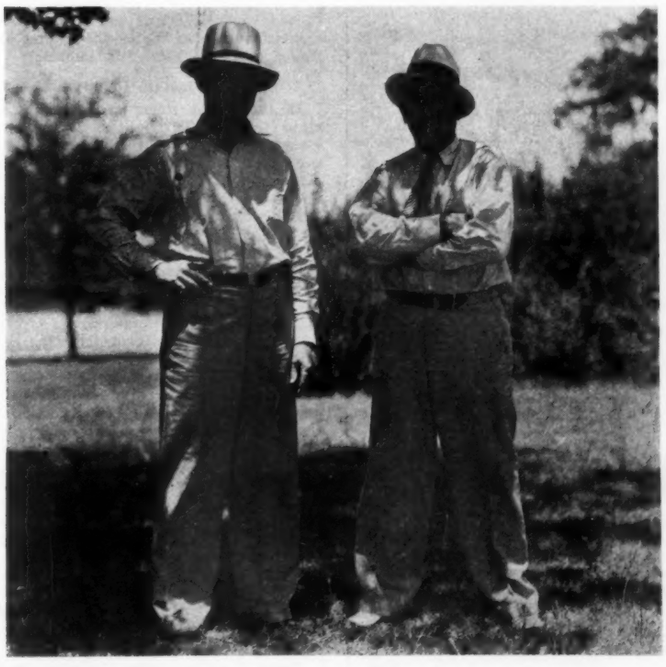
The San Patricio Drilling Co., recently organized by P. C. Rutherford, W. N. Hooper and R. J. Delahoussaye, has one rig running for Brown & Wheeler in the Conroe Field. Mr. Delahoussaye is pushing tools.

George Echols has a total of nine rigs running at this time, having added three new locations to his active list in the past 10 days. These are a second rig for the Humble Oil & Refining Co. in the Greta Field; one for the Houston Oil Co. in East Texas, and one for the Sun Oil Co. and the Magnolia Oil Co. in Duval County.

Alamo Drilling Co. is drilling one test for C. B. Bunte, Inc., San Antonio, in the Odom Field, San Patricio County, and has one rig on a work-over for the Stanolind Oil & Gas Co. in the Greta Field.

John Mabee, who at one time was credited with having more rigs running than any other contractor in the world, has moved a rig into the Tomball Field, Harris County, to drill a well on an 80-acre lease held by the Shell Petroleum Corp. During the height of the Oklahoma City boom, Mr. Mabee had more than 40 rigs running simultaneously. Many contractors now prominent both in Oklahoma and Texas worked, at one time or another, for Mr. Mabee. It is said that Mr. Mabee is now the largest crude oil producer in the state of Kansas, not excepting the major operators in that state.

Steen Drilling Co. has two rigs running in Ector County for the Landreth Production Co., and another on its own property near Converse, La. It has just completed its first well in the Splendora area, which is now making approximately 100 bbls. of distillate a day. The operators state that the action of this well is very similar to the action of the first well drilled in the Conroe Field, and anticipate that as pressure on the well drops the distillate will gradually color up and the well develop into an oil well.



E. J. Gracey (left) and Lon H. Cron, jointly constituting the firm of Cron & Gracey, drilling contractors, who drilled 100 contract wells in East Texas, in addition to half a dozen for themselves. Both had been associated with John Mabee's world-record drilling company, Mr. Cron for more than eight years, and Mr. Gracey for more than six years. In July, 1931, the men pooled their resources, totaling three strings of rotary tools, and started out for themselves. Their success in East Texas led them to venture into the Gulf Coast, where they first drilled six wells for the Texas Co. at Conroe. This was followed by a well for the Sinclair Prairie Oil Co. at Hockley, and subsequently by a number of wells for both the Shell Petroleum Corp. and the Barnsdall Oil Co. in the Iowa Field, Louisiana. At this time the company has six rigs running, five in the Gulf Coast and one in East Texas.

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Abandonment in Splendora Turns Attention to the Possibilities Left in Another Direction

By A. C. EASTERWOOD
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., June 18.—The abandonment of Humble Oil & Refining Co.'s No. 1 Texas Long Leaf in the Splendora area of eastern Montgomery County has thrown an unfavorable light on the northeast trend and in turn has focused the possibilities of production to another direction. Previously it has been the general opinion that the trend of production lay to the northeast and in the direction of the Cleveland well across the line in Liberty County. This was looked upon as the most logical direction and it was the belief of some the two areas would connect. Although this outcome was somewhat of a setback and quite disappointing, the area continues to hold considerable interest, and with three wells reported scheduled to be drilled near Steen's discovery in the near future, the area will in all probability attract as much if not more interest than in the past.

Humble Oil & Refining Co.'s No. 1 Texas Long Leaf, about a mile north and slightly east of Steen's well, was abandoned as dry with a total depth of 6,238 feet in shale after failing to find production in the upper Cockfield sand from which the discovery well is producing. It topped the Discorbis at 2,335 feet, had Heterostegina at 2,560 feet, topped Frio at 2,590 feet, drilled top of Massilina Pratti at 4,700 feet, had top of Hockley at 4,822 feet and drilled top of Cockfield at 5,647 feet actual or 5,503 feet subsea.

Discovery Well

Steen Drilling Co.'s No. 1 Texas Long Leaf, discovery well, on a 20-hour test during the past week made 44 bbls. of 65 corrected gravity white distillate through one-quarter inch choke and the tubing pressure dropped from 1,950 pounds to 1,850 pounds. Late in the week it was flowing around 70 bbls. daily with an estimated 7,000,000 feet of gas through one-quarter inch chokes and showing 1,500 pounds pressure. The well is estimated good for 30,000,000 feet of gas daily. It was drilled into salt water twice before being plugged back to 5,841 feet in the upper Cockfield horizon and completed. In the first hole it drilled into salt water sand from 6,045-53 feet and the second hole was carried to 6,041 feet and on a drill stem test from 6,007-21 feet it showed 32 fourbles of salt water. The well is almost identical to that of the discovery well in the Conroe Field, both of which came in making gas and distillate. Strake's discovery well at Conroe was drilled on the northeast edge of the field.

It is reported Humble Oil & Refining Co. has staked a location for a well southeast of Steen's discovery and on the Mrs. A. M. Platte and others 100-acre tract in the William Barker Survey No. A-82. Another test is scheduled to be drilled about 4,000 feet southeast of the discovery while still another is scheduled to start within the next 60 days and about 2¾ miles to the east and slightly south of Steen's well.

Montgomery County

Across the line in northwestern Montgomery County, Gulf Production Co.'s No. 4-C Kirby, west of the discovery well, was drilling below 3,300 feet. Although this well is still shallow and it will probably be a couple of weeks before it reaches an important depth, it is of great importance as it is west of the discovery well, which is just about the only direction not condemned. Dry holes have already been drilled to the north, east, south and southwest. Gulf's No. 2-C Kirby, south of the discovery, has been plugged back to 5,300 feet after drilling to 5,892 feet where it showed only a little oily mud with no pressure. At last report it was preparing to whipstock and drill a new hole.

Cleveland Area

East and a little south of the Cleveland area, H. Sample's No. 1 Security Trust Co., has been abandoned as dry with total depth of 6,818 feet. It had salt water sand from 6,799-6,818 feet. It topped the Dibollensis at 6,300-12 feet and drilled top of the Cockfield at 6,515 feet actual, or 6,396 feet subsea.

San Jacinto County

In the southeastern part of San Jacinto County, Turnbull & Irwin have staked location and late in the week had completed a derrick and was moving in rig for No. 1 Peoples State Bank, 1,360 feet east of the southwest corner of the tract in the J. D. Martinez Survey.

Harris County

Loring Oil Co.'s No. 1 Westmoreland, just west of the city limits of Houston in Harris County, set 12½-inch casing at 1,146 feet and was waiting on cement to set. The well is already creating considerable interest and several companies and independents have already taken protection. It is reported Louis Franklin and Julius Fohs have taken a portion of the Stanolind block, consisting of about 3,600 acres and will drill a well. The block adjoins the Loring Oil Co.'s block to the west. United Gas Co. is also reported buying in the area. The lease play is said to extend from the Ogburn prospect to the Loring well, near the Houston city limits.

General Crude Oil Co.'s No. 1 Rorick Estate, in the John C. Ogburn Survey, west central part of the county, has finished rigging up and will probably spud the first of the week.

About 5 miles north of Goose Creek, J. E. Seiber's No. 1 Tyrell & Gareth, in the Ashbell Smith Survey, was drilling below 6,500 feet.

Waller County

Stanolind and Amerada Petroleum Corp.'s No. 1 Manor Heirs, in the southeast part of Waller County, which has been attracting considerable attention during recent weeks, made a drill stem test from 6,583-6,623 feet and built up 350 pounds pressure in 10 minutes and showed 150 feet of mud with some distillate and 480 feet of salt water through one-quarter inch choke on bottom and three-eighths inch choke on top. It was then cored deeper from 6,623-30 feet and recovered 1 foot which was silty sand with an odor and a salty taste. From 6,630-49 feet it had 3 feet of brittle shale, 2½ feet of hard sand and sandy shale with a salty taste, 9 feet of brittle shale, and 1½ feet of sandy shale. Late in the week it was fishing for two joints of drill stem and a core barrel with total depth of 6,713 feet. It topped the Hockley at 5,385 feet and had Caddell 6,046 feet. The top of Cockfield was encountered 6,338 feet actual or 6,151 feet subsea.

Jasper County

Northeast of the Spurger area in Jasper County, Alpha Petroleum Co.'s No. 1 Cartwright, in the Edward Legrande Survey, has been abandoned as dry with total depth of 5,108 feet. It topped the Cockfield 4,436 feet actual or 4,368 feet subsea and had salt water sand from 4,695-4,703 feet. It had top of the Vicksburg 3,138 feet, top of Hockley 3,760 feet, drilled top of Massilina 3,688 feet, and went into Warreni 3,390 feet.

Raccoon Bend

In the Raccoon Bend Field in Austin County, Humble Oil & Refining Co. had three wells destined for the newly discovered Cockfield sand. Two of the wells were waiting on cement and will probably drill plugs and bring in early in the week while the other was drilling and looked as though it had missed the sand. No. 2-B Remmert was waiting on cement with total depth of 4,070 feet and No. 13 Thompson had cemented casing with total depth of 4,052 feet. No. 3 Effie Kearns was drilling shale at 4,163 feet with no showing yet encountered. Humble's No. 5 L. B. Sherwood was completed in the upper sand at 3,383 feet and pumped 57 bbls. in eight hours.

Bosco District

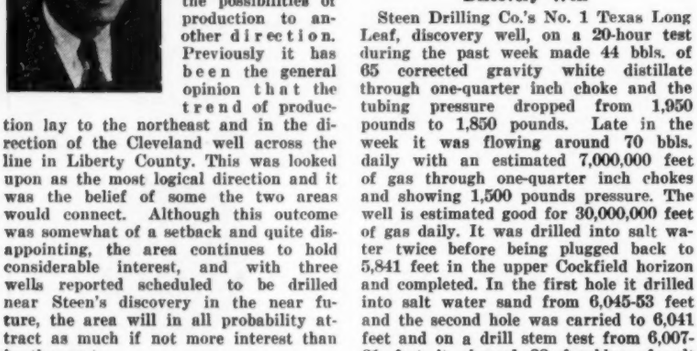
At Bosco in eastern Acadia Parish, Superior Oil Co. of California is making considerable progress with its wildcat drilling campaign. It has six wells drilling within a radius of a mile and a half of the discovery, two already below 7,000 feet. No. 1 U. T. Iseringhauser was drilling 7,063 feet in shale and No. 1 Kahn and others was below 7,002 feet in shale and sand. No. 1 Elize Mire was below 5,867 feet in shale, No. 1 Richard was drilling 5,050 feet in shale, No. 1 Arceneaux and others was drilling sand and gravel at 904 feet, and No. 1 Savoie was waiting on cement at 220 feet. The discovery well, Superior's No. 1 Hermandes, was still flowing an average of 817 bbls. daily through one-quarter inch choke.

At Roanoke

At Roanoke, in Jefferson Davis Parish, Shell Petroleum Corp.'s No. 1 Jernigan, an east offset to the discovery well, was drilling 1,032 feet. About three-quarters of a mile southwest of the discovery, Humble Oil & Refining Co.'s No. 3 Devilbiss, had spudded and late in the week was below 300 feet. Shell's No. 1 Kratzer, discovery well for the area, proved the deep-seated salt dome productive when it came in flowing at the rate of 1,035 bbls. daily at 8,682 feet.

Jackson County

The Vanderbilt area in Jackson County is scheduled for an active drilling campaign with five wells reported to be



WILSON-SNYDERS DRILL GULF COAST'S DEEPEST PRODUCER

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drilled in the area in the near future. At present the area only has one active test, Encio Gas Co.'s No. 1 Siedel & Simmons, offsetting the discovery well, which was drilling below 4,500 feet at last report. Encio's No. 1 Drummond, about 3,800 feet west and south of the discovery, was rigging up and preparing to spud. No. 1 American Realty & Investment Co., in the Vanderbilt townsite and about a mile west of the discovery was drilling a water well. Turman Oil Co. of Tulsa is reported to have purchased one-half interest in three 50-acre tracts around the Encio Gas Co.'s discovery for a reported consideration of $50,000 cash and three free wells. After the three wells are drilled it is reported Turnbull & Irwin will share the drilling expense which will be paid out of one-quarter of the first oil produced. The first test will be drilled about 600 feet due west of the discovery well. One lease is about 2,500 feet north of the discovery, while the other is about the same distance west of the producer.

Calhoun County

In southern Calhoun County and between Seadrift and O'Connor, Continental Oil Co.'s No. 1 Moody was drilling at 2,741 feet. Heep Oil Co.'s No. 2 Welder was drilling shale and shells at 4,557 feet.

Refugio County

In the Bonnie View area of Refugio County, Heard-Holland Oil Co.'s No. 1 Peck was preparing to deepen. It cored sandy shale with an odor of oil and gas from 5,337-51 feet and on a drill stem test it built up 220 pounds pressure in 11 minutes and showed 100 feet of mud cut with gasoline. C. B. Bunte's No. 2 Rooke, about 2 miles southwest of Woodsboro, was drilling 5,575 feet. No. 3 Rooke was reaming with total depth of 5,560 feet. Neither of the wells have encountered any showings of importance.

Quintiana's No. 1 O'Connor, about 8 miles northeast of the town of Refugio and 3 miles southeast of the Greta Field, was shut down at 5,159 feet. On a drill stem test from 4,939-50 feet in 5½ minutes it built up 550 pounds pressure and showed 12 feet of mud cut with oil and recovered 3 gallons of 50 gravity oil. Midway between the O'Connor Ranch and the Greta Field, G. Jeffries' No. 1 Jas. F. Power, was drilling 3,877 feet in rock.

Coletto Creek

At Coletta Creek in Victoria County, Petrol Corp.'s No. 1 John Machalic, in the Rafael Mancha Survey, was fishing for stuck drill stem 200 feet off bottom. Total depth is 2,875 feet, and it is believed the well will make a producer in sand encountered from 2,828-41 feet. On the first test it showed 11 joints of 28 gravity oil in sand from 2,833-41 feet. It was then cored to 2,875 feet and the second drill stem test showed dry.

North of the Keeran Field in Victoria County, C. & R. G. Drilling Co.'s No. 1 R. C. Ross was drilling green shale at 5,625 feet. The well is reported to have had shows of gas at 5,470 feet, 5,490 feet, 5,505 feet and 5,595 feet. It topped the upper Discorbis at 4,416 feet, had middle Discorbis at 4,575 feet, and encountered top of Heterostegina at 4,801 feet actual or 4,741 feet subsea. Humble Oil & Refining Co.'s No. 1 Mitchell in the E. Benavides Survey, had sand at 4,885-90 feet with a show of oil. The drill stem test failed and at last report was drilling ahead at 4,975 feet.

Galveston County

George K. Spoor's No. 1 Maco Stewart, about 4 miles south of Dickinson, in Galveston County, was fishing a drill bit cone with total depth of 6,196 feet. The well had sand with a slight show of gas from 6,190-96 feet in the lower Miocene and still had more than a hundred feet of reaming to complete before a test could be made. About 3 miles north of Spoor's well, Humble Oil & Refining Co.'s No. 1 Maco Stewart, just south of the Dickinson Bayou, was drilling at 2,680 feet in shale. It has been reported the well will be carried to at least 10,000 feet. Royalty in the area is said to be bringing $100 to $125 per acre. The area has been getting a very active lease play during the past few weeks, taking in the

(Continued on Page 82)

Gulf Coast Fields and Wildcats

Week Ending June 16

RACCOON BEND—AUSTIN COUNTY

Company, farm and location—	Remarks:
Humble O. & R. Co.'s No. 3 Effie Kearns, 270 ft. W of E line, 825 ft. N of S line of 175-ac. lease in W. C. White Sur.	Drlg. shale 4,163 ft.
Humble O. & R. Co.'s No. 5 L. B. Sherwood, W. C. White Sur., Abst. 101	T.D. 3,383 ft.; pump. 57 bbls. 8 hrs.; comp.
Humble O. & R. Co.'s No. 2-B Remmert	T.D. 4,070 ft.; W.O.C.
Humble O. & R. Co.'s No. 13 Thompson	T.D. 4,052 ft.; W.O.C.

DANBURY—BRAZORIA COUNTY

Shell Pet. Corp.'s No. 3 Haury, 800 ft. SE of No. 2 in line with No. 2 and No. 1 Blakely-Winston, H.& T.B. Sur. No. 13	Derrick.

DAMON MOUND—BRAZORIA COUNTY

Sinclair Prairie Oil Co.'s No. 4 Lucas, A. Darst Sur., 125 ft. N S line, 25 ft. E W line, Blk. 15	Drlg. shale 1,448 ft.
H. Wisdom's No. 2 fee, A. Darst Sur., 50 ft. E W line and 200 ft. N of No. 1	Drlg. shale 1,001 ft.
H. Wisdom's No. 3 fee, A. Darst Sur.	Drlg. shale 130 ft.
H. Wisdom's No. 1 Proctor, 40 ft. out of SW cor. Blk. 1, A. Darst Sur.	Spud.

MANVEL—BRAZORIA COUNTY

Gulf Prod. Co.'s No. 1 Colby	Drlg. 1,220 ft.
Texas Co. et al's No. 1 Alice & Ritchie, 265 ft. S, 41 deg. 36 min. W, 330 ft. N, 47 deg. 53 min. W of E cor. of Lot 4, Div. E, N. P. Little Sur.	T.D. 4,030 ft.; comp. 91 bbls. dly; ¼-in. choke.
Texas Co.'s No. 10-B Belcher, 2,658 ft. N, 48 deg. 9 ft. W and 330 ft. N, 41 deg. 51 ft. E of S cor. of lease in H. N. Little Survey	Drlg. shale 4,799 ft.
Texas Co.'s No. 1 Boff, 265 ft. from S and 325 ft. from W line of C of Lot 24, H.T.&B. Sur. No. 74	T.D. 7,609 ft.; stuck drill pipe at 1,273 ft.
Texas Co.'s No. 1 John Groce, 200 ft. E of W line, 200 ft. from N line at right angles	Drlg. lime and shells 4,067 ft.
Texas Co.'s No. 1 W. D. Morrison, 743 ft. from N and 441 ft. from E lines of lease, C of Lot 33, A.C.H.&B. Sub., Sec. 91	T.D. 5,660 ft.; P.B. to 3,700 ft.; W.O.C.

STRATTON RIDGE—BRAZORIA COUNTY

Amerada Pet. Corp.'s No. 5 Seaborn, Austin-Williams Sur., 600 ft. E of No. 3 and 329 ft. S at R/A	Stuck D.S. 7,202 ft.; P.B. to 5,500 ft.; W.O.C.

WEST COLUMBIA—BRAZORIA COUNTY

Miramar Oil Corp.'s No. 3 Hogg, 100 ft. N of No. 2 and 100 ft. from W line of lease	T.D. 5,360 ft.; P.B. 2,400 ft.; W.O.C.
Texas Co.'s No. 84 Hogg, 2,483 ft. N, 50 ft. W from SE cor. of lease in M. Varner Sur.	Derrick.

BARBERS HILL—CHAMBERS COUNTY

McAlbert's No. 6 Wilburn, 240 ft. W of No. 5 in Henry Griffith Sur.	Preparing to W.O.
Mills Bennett Prod. Co.'s No. 1 L. W. Luschner	Drlg. 480 ft.
Mills Bennett Prod. Co.'s No. 3-B Gulf fee, 25 ft. out of SE cor. of lease	Top salt 1,402 ft.; drlg. salt 2,415 ft.
Mills Bennett Prod. Co.'s No. 9-B Wilburn, Henry Griffith league, 737 ft. E W line and 190 ft. S N line of lease	Derrick.

(Continued on Page 89)

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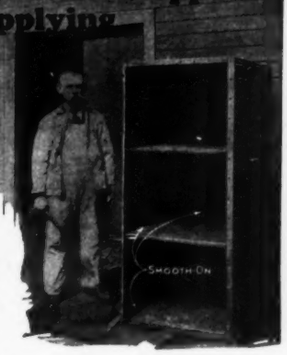

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Carter Oil Co. Has 9,000 Bbl. Well in Crescent Pool; Wilcox Sand Pool South of Wewoka

By JAMES McINTYRE

The next general open hearing to fix the allowables for the different pools in Oklahoma will be held before the Corporation Commission on June 21 at 10 a.m. in the Commission's courtroom at Oklahoma City.

The Planning and Coordination Committee on allocations for the State of Oklahoma will meet with the umpire and his assistants at 10 a.m., June 20, in the umpire's office. This meeting will be open to all producers and any recommendation any producer desires to make with reference to new pools or to the allocation in pools where they have production, will be heard and discussed. All interested parties are invited to attend.

The Corporation Commission has sent the following communication to all purchasers of oil in Oklahoma in regard to the meeting:

"If you desire to make nominations for the month of July, 1934, you will be afforded the opportunity to do so either in person, by a representative designated by you, or by letter or telegram addressed to the Proration Umpire, care of the Corporation Commission, State Capitol, Oklahoma City; all letters or telegrams should be mailed or wired so as to reach here not later than the morning of the 20th of June.

"All nominations should specify the approximate daily amounts of crude you desire from each common source of supply within the state, from which you expect to purchase crude oil.

"Unless we receive a nomination or reply from you, the umpire will assume that your requirements from the various common sources of supply within the state, from which you are receiving crude oil, will be approximately the same for the month of July, 1934, as they were for May and June of this year."

Oklahoma Production

Estimated daily average production in the week ending June 16 and the preceding week was as follows:

Pool—	Barrels June 16	Barrels June 9
Allen	8,400	8,505
Blackwell district	5,000	5,000
Bristow-Slick	10,500	10,500
Cushing-Shamrock	14,000	14,000
Chandler district	6,000	6,000
Davenport	750	750
Healdton	9,100	9,100
Hewitt	5,000	5,000
Burbank	9,100	9,100
South Burbank	5,200	5,100
Balance of Osage	25,000	24,750
Lucien	8,100	8,370
Crescent	5,325	3,505
Marshall-Lovell	1,400	1,400
Bowlegs	12,165	9,550
Carr City	7,090	7,145
Earlsboro	10,660	9,675
East Earlsboro	12,270	9,310
South Earlsboro	1,280	1,370
Little River	16,550	12,550
East Little River	890	815
Seminole	12,630	11,130
East Seminole	1,100	970
Searight	3,395	3,235
Maud	1,210	1,275
Mission	4,090	3,700
St. Louis-Pearson	26,550	22,760
Cromwell	4,650	4,650
Papoose	1,350	1,350
Oklahoma City	217,230	238,310
Asher-West Asher	1,825	1,990
Tatums	6,700	6,640
Sholem-Alechem	4,500	4,500
Duncan	4,400	4,360
Tonkawa-Garber-Thomas	6,800	6,800
Fish	2,545	2,490
Konawa	2,415	2,060
Gray	2,325	2,070
Graham	3,600	3,500
Holdenville	3,120	3,050
Wewoka	4,450	4,450
Yale-Jennings	5,100	5,100
Other pools	63,775	69,130
Total Oklahoma	556,540	548,935

The Carter Oil Co. has one of the largest initial producers thus far opened up in the Crescent Pool in Noble County. It is better than a 9,000-bbl. well. It found second Wilcox sand at 6,288-6,313 feet, total depth, and the well flowed 4,848 bbls. in 12 hours, making 393 bbls. the last hour. The well was reported Monday morning and was not completed.

The Winona Oil Co. & Jarvis & Holm's Wilcox sand well, 7 miles south of Wewoka and south of the Fish Pool, No. 1 Myers, SE SW NE Section 31-7-8, was opened Friday and produced 2,102 bbls. of oil and 1,250,000 feet of gas through a 1-inch choke in 24 hours. On Saturday it was opened again for one hour and made 150 bbls. in an hour. A location has been staked offsetting this important discovery by Empire Oil & Refining Co. on the east. Stanolind Oil & Gas Co. offsets the lease on the south.

Osage County

Fred Rock's No. 2, a twin, 360 feet north and 300 feet east of SW cor. Section 2-28-10, Osage County, penetrated Peru sand at 1,250-90 feet and drilled to 1,300 feet. It was dry and abandoned.

Mead Oil Co. and others' No. 7 DeNoya, SW cor. Section 10-25-6, South Burbank Field, flowed 353 bbls. in 24 hours from Burbank sand at 2,779-2,845 feet. It was drilled to 2,855 feet and flowed 50 bbls. per hour.

R. J. Barritt Estate's No. 1, NW cor. NE Section 30-25-8, was completed. It was a 20-bbl. pumper at 2,308-24 feet.

Champlin Refining Co. completed No. 14 Kennedy, SE SW SE Section 16-24-7, which had an initial 12-hour production of 500 bbls., following a shot at 2,653-2,704 feet. Same operator completed No. 15 Kennedy, SE NW SE Section 16-24-7, which started at 530 bbls. in 20 hours from sand at 2,598-2,681 feet. Same operator completed No. 4 Others, NE cor. NW Section 16-24-7. It was shot with 160 quarts at 2,603-64 feet and flowed 540 bbls., 5 per cent water, in 24 hours.

A. H. Kasishke's No. 1, SE NE Section 16-24-7, deepened from 2,640 feet to 2,672 feet, swabbed 59 bbls. in eight hours and was completed.

Bay Oil Co.'s No. 1, SE cor. NW Section 14-23-7, was dry and abandoned. It was drilled to the Mississippi lime at 2,606-07 feet and had only a small [illegible] showing.

Superior Oil Co.'s No. 1, CNL SE Section 5-22-11, was dry and abandoned in Mississippi lime at 1,860 feet.

Pueblo Oil Co.'s No. 8, 375 feet north and 1,000 feet west of C Section 1[illegible] 21-8, is estimated as a 15-bbl. well. It was shot twice from 2,171-2,210 feet.

Murray Ringold's No. 4 Turkey Island C E SW NE Section 25-21-8, was completed in Layton sand at 1,096-1,137 feet. It was shot and flowed 45 bbls. in 2[illegible] hours.

Gray & Tolson's No. 6, SE SW SW Section 27-21-9, was a 10-bbl. pumper at 1,116-23 feet, and Ohio Osage's No. [illegible] CSL NE NW Section 34-21-9, was a 12-bbl. pumper at 1,106-13 feet. Both wells were completed.

Marydum Oil Co.'s No. 1, SE cor. NE Section 35-21-10, was dry and abandoned at 2,224 feet.

New work started in Osage County included Carter Oil Co.'s No. 1, SE SW SE Section 16-28-5, a location; Carter Oil Co. and Peters Petroleum Corp. No. 1, NW cor. SW Section 2-25-[illegible] building rig; Lewis Production Co. and Continental Oil Co.'s No. 3, SE SW SE Section 9-24-7, location; same companies' No. 4, SW cor. SE Section 9-24-7 drilling at 360 feet; Sinclair Prairie Oil Co.'s No. 7, NE NW SW Section 16-24-7, cellar; Barnsdall Oil Co.'s No. 1[illegible] SE NE SW SE Section 18-23-12, location.

Harper County

Sinclair Prairie Oil Co. is moving in rotary to start a wildcat test in Harper County, No. 1 Neff, C SW SE Section 21-26-24w, in the northwestern part of the State.

Logan County

Anderson & Kerr have a rig up for No. 1 James, SE NE Section 11-18-4w, and Gallagher and others have made a location for No. 1 James, SE NE NE Section 11-18-4w.

Mid-Continent Petroleum Corp.'s No. 1 Moss, C SW SE Section 11-17-1w, in the Langston area, is drilling below 3,800 feet.

In the Crescent Pool, Gypsy Oil Co.'s No. 2 Campion, C NW SW Section 2[illegible] 17-4w, flowed 5,235 bbls. through casing in 24 hours from Wilcox sand at 6,220-55 feet.

Carter Oil Co. and Gypsy Oil Co.'s No. 2 Herren, C NE NE Section 28-17-4w, found first Wilcox sand at 6,288 feet and was drilling out cement plug, total depth 6,316 feet.

Noble County

In the Lucien Pool, Noble County, Lucien Consolidated's No. 2 Miller, C NE SE Section 18-20-2w, found second Wilcox sand at 5,113 feet. It flowed 1,18[illegible] bbls. of oil and 7,500,000 feet of gas the first 24 hours. Drilling was continued and at 5,168 feet, still in sand, the well was flowing at the rate of 775 bbls. a day.

Magnolia Petroleum Co.'s No. 2 Long, C NW SE Section 18-20-2w, was completed. In a 12-hour potential test it flowed 1,195 bbls. with gas at the rate of 3,500,000 feet per day. The big production came from second Wilcox sand at 5,130-5,208 feet.

Shell Petroleum Corp.'s No. 2 Kolb, C SW SW Section 28-20-2w, found first Wilcox sand at 4,952-5,121 feet, in sand, and the well flowed 41 bbls. per hour. It was shot with 40 quarts and flowed 1,065 bbls. in 18 hours.

Skelly Oil Co. took a potential test of its No. 2 Long, C SW NW Section 2[illegible]

Wildcat Operations in Oklahoma

Week Ending June 16

Northern Oklahoma

ALFALFA COUNTY

Company, farm and location—	Remarks
Acre et al's No. 1 Acre, C SW NE Sec. 14-24-11w	T.D. 6,460 ft.; C.O.

BECKHAM COUNTY

Price and Watchorn O. & G. Co.'s No. 1 Hoard, NE SW Sec. 17-8-26w	Rig.

CADDO COUNTY

Denver Prod. & Ref. Co.'s No. 1 Noe, NW SW SW Sec. 34-10-10w	Drlg. 10,570 ft. in shale.

CLEVELAND COUNTY

Phillips Pet. Co. et al's No. 1 Baker, C SE NW Sec. 11-9-2w	Drlg. 4,958 ft.

COAL COUNTY

Moore & Deaner's No. 1 Edward, NW NE SE Sec. 21-2-8	S.D. 4,970 ft.
Emanuel, Rudman & Hatcher's No. 1 Moyer, C SW SE NW Sec. 7-3-8	S.D. 1,525 ft.

GARFIELD COUNTY

Ross Cummings et al's No. 1 Gage, SE NW Sec. 27-23-3w	Spudded.

GARVIN COUNTY

Denver P. & R.'s No. 1 Newburn, C SE SW Sec. 22-5-1e.	Drlg. 5,140 ft.

GRANT COUNTY

W. Earl Witt et al's No. 1 Patton, SW SE Sec. 19-29-3w.	Cellar and pits.

HARPER COUNTY

Sinclair Prairie Oil Co.'s No. 1 Neff, C SW SE Sec. 21-26-24w	Moving in rotary.

HUGHES COUNTY

Dickison et al's No. 1 Webster, NW NE Sec. 22-10-10..	Rig on ground
J. B. Hill's No. 1-A Perkins, C W½ SW SW Sec. 7-5-9..	T.D. 1,075 ft.; S.D.
Olympic Oil Co.'s No. 1-A McClassen, SE NW NW Sec. 12-9-8	Cromwell sand 3,433 ft.; S.D. 3,468 ft. for orders.
Olympic Oil Co.'s No. 1 McClassen, SE NW NW Sec. 13-9-8	T.D. 600 ft.; lost tools; S.D.
Pioneer Pet. Co. et al's No. 1 Brock, SE cor. Sec. 26-5-11	Spudded and abd.
Scruggs et al's No. 1 Black, NE Sec. 13-9-10	Wilcox sand 3,922-29 ft.; S.W.

KINGFISHER COUNTY

Jadeka Dev. Co.'s No. 1 Frakes, C SW NE SW Sec. 16-15-6w	Drlg. 3,754 ft.

KIOWA COUNTY

Bailey & Johnson's No. 1 Patts, SW NW Sec. 31-7-14w..	S.D. 300 ft. for wtr.

LEFLORE COUNTY

East Okla. Oil & Gas Co.'s No. 1 Metcalf, SW cor. Sec. 2-4-26	T.D. 1,505 ft.; C.O.
Murdock et al's No. 1 fee, SW NE SW Sec. 15-5-25e....	T.D. 2,425 ft.; fishing.

LINCOLN COUNTY

Harvey Newman Oil Co.'s No. 1 Rueb, C NW NE Sec. 23-15-5	Cellar
Mid-Continental Oil Co.'s No. 1 Bolby, NE SE Sec. 27-12-2	Moving in rotary.
L. G. Hulse's No. 1 Sloan, SW NW SE Sec. 19-17-3.....	Old T.D. 1,474 ft.; drlg. in new hole at 720 ft.
The Texas Co.'s No. 1 Gessmann, SE NE Sec. 33-14-4	...Drlg. 4,775 ft.

LOGAN COUNTY

W. N. Anthony's No. 1 Fruin, SE SW Sec. 4-16-1	Drlg. 3,004 ft.

NOBLE COUNTY

Continental Oil Co. et al's No. 1 Bennett, SE NW Sec. 19-20-1w	Set 7-in. csg. 5,027 ft.
Magnolia Pet. Co.'s No. 1 Crawford, SE NW Sec. 27-21-2.	Rotary moved in.
Texas Co. et al's No. 1 Voss, C NE SE Sec. 28-22-2w....	Set 8-in. csg. 4,753 ft.; R.U. standard tools.

OKFUSKEE COUNTY

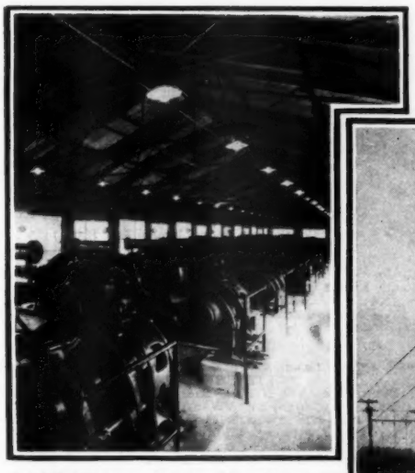
Delton Oil Co.'s No. 1 Fixico, SE cor. Sec. 7-11-8.....	Rig.

OKLAHOMA COUNTY

Gypsy Oil Co. et al's No. 1 Harris, C SW NE Sec. 27-13-4w	Drlg. 6,301 ft.
Springrose Drlg. Co.'s No. 1 Edwards, C SE Sec. 19-11-1	T.D. 6,540 ft.; 400 ft. drill pipe in hole.

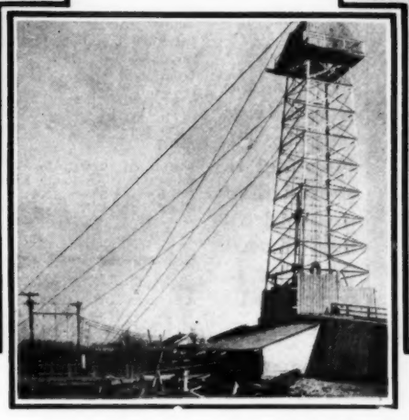
(Continued on Next Page)

OPERATING COSTS *when you use* DROP ELECTRIC POWER



ABOVE: This pumping plant for lifting oil was equipped to use electric power for much less than it could have been equipped to use the old type, non-electric equipment.

BELOW: Drilling costs on this well in the Oklahoma City field are being held to a minimum through the use of purchased electric power.



ABOVE: Typical pipe line pumping station using purchased electric power. Required an investment of only about 1/3 to 1/4 of that of other forms of power.

It is no mere statement when we say that purchased electric power lowers operating costs. It really does. Actual figures prove it!

Drillers can cut their drilling costs to a minimum. Producers can pump more oil at a lower power cost per barrel. Pipe line pumping stations can be equipped to use electric power for less than any other type of power. Refineries can use it more economically, too.

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● Our engineers will gladly supply you with complete information on the use of electric power. There is no obligation on your part.

OKLAHOMA GAS AND ELECTRIC COMPANY

Commercial Department

OKLAHOMA CITY OKLAHOMA

20-2w, and it flowed 1,207 bbls. of oil in 12 hours with gas at the rate of 2,000,000 feet per day. First Wilcox sand lay at 5,005-57 feet and second Wilcox at 5,096-5,145 feet, total depth. It was completed.

Carter Oil Co.'s No. 2 Tate, C SE NW Section 29-20-2w, flowed 140 bbls. in two heads from first Wilcox sand at 4,972-5,025 feet.

Magnolia Petroleum Co.'s No. 1 Smith, C NE SW Section 29-20-2w, had first Wilcox sand at 5,006-44 feet and second at 5,113 feet, total depth 5,136 feet. The well flowed 109 bbls. per day while drilling in the second sand.

Only one new operation in the Lucien area was started, Shell Petroleum Corp.'s No. 1 Henn, C NE NE Section 32-20-2w, rigging up rotary.

Continental Oil Co. and others' No. 1 Bennett, SE NW Section 19-20-1w, a wildcat in Noble County, set 7-inch casing at 5,027 feet after finding first Wilcox sand at 5,106-15 feet with a small showing of oil.

Oklahoma County

Helmerich & Payne's No. 1 Larkins, NE NW SE Section 34-12-3w, Oklahoma City Field, made 1,690 bbls. in a four-hour potential test, producing from Wilcox sand at 6,248-6,405 feet.

Indian Territory Illuminating Oil Co.'s No. 9 Peterson, SW cor. Section 25-11-3w, flowed 560 bbls. in 14 hours from sand at 6,457-6,530 feet. Green shale was penetrated at 6,530-6,602 feet, total depth 6,604 feet.

Indian Territory Illuminating Oil Co.'s No. 3 Goldia Lord, NE cor. Section 35-11-3w, flowed 414 bbls. in a four-hour potential gauge, with gas at the rate of 20,000,000 feet per day, producing from sand at 6,500-50 feet, total depth.

Springrose Drilling Co. and others' No. 1 Edwards, C SE SE Section 19-11-1[illegible] in the Newalla area, had 400 feet of drill pipe in the hole which was at a total depth of 6,540 feet. A sand was topped at 6,514 feet, which may be Wilcox. This well was a small producer in Hunton lime topped at 6,025 feet, and in drilling deeper penetrated Hunton, Sylvan, Viola, Simpson dense and dolomite.

The Gypsy Oil Co.'s wildcat test on a community block, No. 1 Grant, C SE NW Section 27-13-4w, is approaching a very interesting depth. It was last reported drilling at 6,301 feet. Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s test, No. 1 Seuneran, NE cor. Section 6-13-3w, was drilling at 5,07[illegible] feet.

H. E. Rapp's No. 1 Price, C E half NE SW Section 19-14-3w, which was deepened from 6,708 feet to 6,748 feet and then plugged back to 6,733 feet, was estimated to be good for 20 bbls. per day as it stood, but Rapp was running a Hughes plunger lift to test the well which had second Wilcox sand at 6,68[illegible] feet.

Mid-Kansas Oil & Gas Co.'s No. 1 Dahl, SE cor. Section 31-14-3w, an offset to the same company's discovery well in the Edmond Pool, found checker board lime at 5,345 feet, or 29 feet higher structurally than in the first well. It was drilling at 5,413 feet, in lime. This

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The Positive Pull Type accessories are interchangeable with the removable (key) type and the rigid type; and the same rugged construction and efficient pumping action are present in full measure.

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The complete tube assembly with Mandrel is then run in on the the rods.

By resting the weight of rods on pump the Mandrel is seated, then spaced as usual and pumping is commenced.

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Wildcat Operations in Oklahoma
(Continued from Preceding Page)

OSAGE COUNTY

Norbia Oil & Gas Co.'s No. 1, NW SE Sec. 21-24-7 .....Drlg. 1,186 ft.
Peters Pet. Co. and Norbia Oil Co.'s No. 1, SW cor. Sec. 15-25-5 .....S.D. for wtr. 1,610 ft.
Empire O. & R. Co.'s No. 1, SE NE Sec. 2-25-3 .....Layton sand 2,570-2,621 ft. pumped 55 bbls. oil, 80 bbls. water.

PAWNEE COUNTY

Geo. Thomas' No. 1 School Land, SW cor. Sec. 13-20-5..T.D. 3,438 ft.; U.R. 6-in. csg.

PITTSBURG COUNTY

Arkhoma's No. 1 Cummings, NW NE SE Sec. 6-4-12... Fishing 515 ft.
Exchange Drlg. Co.'s No. 1 Chunn, SE NW Sec. 29-4-14..T.D. 350 ft.; waiting for csg.
W. E. Hailey's No. 1 Drew, NW SW Sec. 21-3-14 .....S.D. 190 ft.
Mid-Western Oil & Gas Co.'s No. 1 Shelton, CSL SE NW Sec. 7-7-13 .....Drlg. 2,306 ft.
Moffett & Hall's No. 1 Jones, C NE NW Sec. 14-3-14 ....Lost tools; T.D. 3,200 ft.; S.D.
C. L. Carlock's No. 1 Chunn, SE NW Sec. 29-4-14 .....Rigging up.

PONTOTOC COUNTY

E. M. Blanchard's No. 1 Crabtree, NE SE NE Sec. 27-2-4..S.D. 2,920 ft.
Boyle et al's No. 1 Newbern, SW NE Sec. 31-5-4 .....Set 8-in. csg. 2,174 ft.
Jarrett Pet. Co.'s No. 1 Johnson, SE NW Sec. 31-4-7...Rig.
Dandridge et al's No. 1 Stafford, NW cor. Sec. 5-1-4e..T.D. 670 ft.; running csg.
Gillette & Kroeger's No. 1 Duver, NW SE Sec. 36-1n-6e..Machine.
Riddle et al's No. 1 Barnes, SE NW SE Sec. 21-5-4 ....Drlg. 2,482 ft.
Southern Oil Corp.'s No. 1 Ladd, C NW NW Sec. 27-3-7.Cellar.

POTTAWATOMIE COUNTY

Phillips and Gypsy Oil Co. et al's No. 1 Flynn, NE NW Sec. 17-6-3e .....Location.
Stanolind-Amerada's No. 1 Goodman, SW NE NE Sec. 5-10-4 .....Drlg. 1,008 ft.

SEMINOLE COUNTY

Harman Oil Co.'s No. 1 Bowlegs, SE NE SW Sec. 1-7-7 .....T.D. 1,655 ft.; U.R. 5-in. csg.
Flemlee et al's No. 1 Bowlegs, SE NE SW Sec. 1-7-7....S.D. 1,260 ft.
Tate & Starbuck's No. 1 Heard, SE NW Sec. 9-6-7.....T.D. 985 ft.; fishing.

Southern Oklahoma

ATOKA COUNTY

Brookshire et al's No. 1 Rowland, NW NE NE Sec. 18-3s-10e .....T.D. 3,567 ft.; 1,900 ft. of fluid in hole.
J. D. Boukan's No. 1 Howard, NW SW NW Sec. 20-3s-10e. Drlg. 1,135 ft.
L. A. Fitts' No. 1 Blankenship, NE cor. NW Sec. 19-3s-10e .....Drlg. 335 ft.
Malernee et al's No. 1 Greenville, N. B., NW SW Sec. 35-3s-13e .....S.G. 1,665-77 ft.; run 8-in. csg. 674 ft.

CARTER COUNTY

Hudson & Poland's No. 1 Sullivan, NE SE Sec. 5-5s-1w..T.D. 1,640 ft.; C.O.
McHenry et al's No. 1-A Ratliff, NW SW Sec. 28-1s-2w..Drlg. 238 ft.

COMANCHE COUNTY

Helden & Taylor's No. 1 Crutcher, SW cor. NE, Sec. 11-1n-12w (O.W.D.D.) .....Drlg. 1,212 ft.
F. F. Stevens' No. 1 Green, SE SW Sec. 11-1n-13w.....Drlg. 920 ft.
Helden & Taylor's No. 2 Crutcher, C NE Sec. 11-1n-12w.T.D. 616 ft.; cmtd. core.

COTTON COUNTY

Ben Russell's No. 1 Zumbuemn, NE cor. SW Sec. 21-4s-12w .....Drlg. 3,520 ft.

GARVIN COUNTY

National Prod. Co.'s No. 1 Littrell, NE cor. Sec. 21-3n-3w. S.D. 299 ft.

GRADY COUNTY

Travis et al's No. 1 Carter, NW NE SE Sec. 32-3-7w..Location.

JOHNSON COUNTY

Okla. Oil Corp.'s No. 1, SW NE SE Sec. 11-2s-8.....Tools in.

MARSHALL COUNTY

Paul Robb's No. 1 Vittetoe, C NE SE Sec. 11-5s-4e.....T.D. 4,937 ft.; fishing for drill pipe.

MURRAY COUNTY

Gilcrease Oil Co.'s No. 1 Brown, SW cor. Sec. 26-1n-2e..Drlg. 1,470 ft.
T. E. Revell et al's No. 1 Wolfe, NE cor. Sec. 18-1-2....Showing of oil 2,340 ft.

PUSHMATAHA COUNTY

J. V. Scrivener et al's No. 1 Swink, C NE SE Sec. 29-4s-20e .....Set csg. 410 ft.
Whitehead et al's No. 1 Messer, SE SW SW Sec. 25-3s-18e. T.D. 2,405 ft.; S.D.

STEPHENS COUNTY

George Pace et al's No. 1 Jack, NE NW NW Sec. 24-4s-4w .....Drlg. 1,141 ft.
Carter Oil Co.'s No. 1 Hildebrand, C SW SE NE Sec. 1-3s-7w .....Location.
Carter Oil Co.'s No. 1 McCasland, C NW NW SW Sec. 32-1s-4w .....Location.
J. W. Madison's No. 1 Tussey, SW SE NW Sec. 24-1n-4w..S.D. 3,210 ft.

TILLMAN COUNTY

I. W. Everett's No. 1 Crane, SW cor. Sec. 15-3s-14w .....Rig.
Ben Russell's No. 1 Fowler SE NW Sec. 21-4s-12w.....Rigging up.

test was delayed a short time fishing out 103 joints of drill pipe.

No new work was reported as having started in the county last week.

Creek County

In Creek County the following completions were recorded in the past week:

Gled Oil Co.'s No. 1 Murrell, SE NW NE Section 17-19-9, was abandoned after getting a hole full of water in Bartlesville sand at 2,480-2,560 feet. Upper sands showed no commercial production.

Holmes & Burton's No. 2 Flint, NE NW NE Section 6-18-11, found water in the Glenn sand at 1,880-1,950 feet and abandoned the well.

Wells & Kendall's No. 4 Tahledge, NW SE NW Section 10-18-11, was dry and abandoned in Mississippi lime at 2,032 feet.

J. E. Crosbie's No. 3 Casey, NW cor. SE Section 3-17-8, Layton sand at 1,340-65 feet, shot with 110 quarts, 200 bbls.

Spartan Investment Co. is rigging up to start No. 11 Lee, SW cor. NE Section 12-18-11.

Lincoln County

Kemp, Lambert and others' No. 1 Cook, SW NW NE Section 23-17-6, was completed. It made an initial production of 125 bbls. of oil and 1,000,000 feet of gas from Misener sand at 3,070-85 feet. Blackwell Oil & Gas Co.'s No. 1 Ladd, SE NE NW Section 23-17-6, was spudding; Home Gas Co.'s No. 1 Crane heirs, NW SW NE Section 23-17-6, rigging up standard tools; Kemp, Lambert and others' No. 2 Cook, SE NW NE Section 23-17-6, location.

In the West Chandler area, Magnolia Petroleum Co.'s No. 5 Wagner, SE SW Eection 2-14-3, was completed. It flowed 712 bbls. in 15 hours and 1,000 bbls. the following 20 hours from Wilcox sand at 4,980-86 feet.

Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 2 Cragg, SE NE NW Section 12-14-3, had first Wilcox sand at 4,965-90 feet and the well flowed 498 bbls. in 24 hours; second Wilcox sand at 5,011-15 feet, total depth, and water; plugged back to 5,002 feet and flowed 385 bbls. in 24 hours. It was not completed. The company made a location for No. 3 Cragg, SE NW NW Section 12-14-3.

Solomon & Cooper were rigging up rotary for No. 2 Jordan, NW SE NE Section 18-14-4, Chandler district. Magnolia Petroleum Co.'s No. 4 Wagner, SW NE NE Section 18-14-4, had Wilcox sand at 4,989 feet and drilled to 4,994 feet. The well swabbed 350 bbls. in 24 hours. It is not completed.

Tulsa and Wagoner Counties

Fleetwood and others' No. 1 Riverbed, 200 feet from north and 570 feet from west line of NE Section 1-18-12, Tulsa County, was a hole full of water at 1,456-1,509 feet. It had a showing of oil and gas. The hole was abandoned.

Holderman and others rigged up for No. 3 Doyle, C SE SW Section 4-17-14. C. A. Mechling spudded No. 1-A Chissoe, CWL SW NE Section 13-17-14, Tulsa County.

Okmulgee and Muskogee Counties

Babcock & Yount's No. 1-A Fields, NE NW NW Section 22-16-15, Muskogee County, was a hole full of water at 1,285-1,365 feet, and abandoned.

Carr & Peterson's No. 12 Ware, CEL SW SW Section 9-15-14, Okmulgee County, was dry and abandoned at 1,086 feet. Sand at 803-28 feet produced only water. Dodson and others had machine in for No. 2 McKinney, CWL SW NE Section 16-15-14, and Jack Summers was drilling at 720 feet in No. 7 McKinney, C E half NW NW Section 16-15-14.

Colton and Phillips Petroleum Co.'s No. 1 Adams, SE NE SE Section 17-14-12, had water in Wilcox sand at 2,738-47 feet and was abandoned.

A. G. Hazlett completed No. 3 Dunbar, CWL SW SW Section 30-14-13. It swabbed 60 bbls. in 24 hours after a shot at 1,944-62 feet.

J. E. Wallace's No. 9 Colbert, CNL NW NW Section 14-14-14, was completed. It made a 40-bbl. well after a shot at 1,782-88 feet.

Colton and Phillips Petroleum Co.'s No. 2 Jackson, a twin, NE SW NE Section 20-13-13, was completed as a 3,000,000-foot gas well at 1,074-1,110 feet. Gled Oil Co.'s No. 2-A Manuel, SW NW SE Section 22-13-14, is a 20-bbl. completion in Wilcox sand at 2,465-75 feet.

Okfuskee County

Keaton & Gold were drilling at 420 feet in No. 2-A Barnett, CSL NW SE NW Section 25-11-11, Okfuskee County.

Smith and others have an estimated 50-bbl. well from Booch sand in No. 1-A Wilson, NW SW NE Section 26-11-11. It is not completed.

Steckell & Durkee's No. 1-A Johnson, SW NE SE Section 2-10-11, is a 60-bbl. completion at 1,628-68 feet.

Wells and others' No. 4 Stephenson, NW cor. SE Section 14-10-11, was dry and abandoned at 2,025 feet. It had some gas and a showing of oil at 2,015-25 feet.

Greater Seminole Field

Waltmeir Drilling Co.'s No. 1 Littleton, SW cor. NW Section 20-9-5, in the Earlsboro district, was acidized in Hunton lime at 4,184-4,217 feet and flowed 120 bbls. of oil net in 12 hours. It was re-treated with acid.

Sinclair Prairie Oil Co.'s No. 2 Spencer, SE SW SE Section 13-9-6, in the Seminole City area, flowed 156 bbls. of oil in 18 hours and then pumped 115 bbls. in 18 hours. It had been acidized in Hunton lime at 3,998-4,062 feet. It was not completed.

Morgan Petroleum Co.'s No. 1 Cashdollar, SE SW NE Section 30-8-4, Pottawatomie County, was abandoned at a total depth of 4,632 feet after the owners tried to make a well of it by shooting and acidizing. It pumped 5 bbls. in 24 hours. Hunton lime was topped at 4,477 feet. It had been plugged back from 4,632 feet to 4,585 feet before it was treated.

Fleetborn and Gypsy Oil Co.'s No. 1 Bowlegs, NE cor. SW Section 27-8-8, was taking a 10-day potential test. It had swabbed 981 bbls. in one day producing from Wilcox sand at 4,198-4,214 feet, the last 2 feet of which was pay.

Keyola Oil Co.'s No. 2 Hines, NW cor. NE Section 9-7-4, in the South St. Louis area, was completed. It had an initial production of 366 bbls. in 48 hours after an acid treatment in Hunton lime at 3,650-3,714 feet.

Prince Drilling Co.'s No. 1 Brandenburg, NE SW NW Section 21-7-4, took a potential test and made 275 bbls. in 48 hours from Hunton lime at 3,670-3,780 feet, after an acid treatment.

Empire Oil & Refining Co.'s No. 1 Billington, SW cor. Section 31-7-5, swabbed 694 bbls. in 19 hours, 3 per cent sediment, from dolomite at 4,141-83 feet, with pay in the lowest 7 feet. Tanks were being built.

Limestone Oil Co.'s No. 12 Walker, SW NE NE Section 15-7-8, Holdenville area, is a 140-bbl. completion on the pump, producing from Calvin sand at 1,190-1,203 feet, which was shot with 40 quarts.

Winona Oil Co. and Jarvis & Holm's No. 1 Myers, SE SW NE Section 31-7-8, flowed 420 bbls. of oil and 150 bbls. of water in 70 minutes from dolomite at 4,216 feet. It showed gas at the rate of 5,000,000 feet per day. Settling tanks were being rebuilt.

Gypsy Oil Co.'s No. 4 Tenwas, CWL SW SE NW Section 25-6-4, swabbed 292 bbls. in 12½ hours from dolomite at 3,357-3,404 feet.

New work in the Greater Seminole area included Carter Oil Co.'s No. 2 H. Joe, C W half NE SW Section 2-9-6, Seminole City area, location; Amerada Petroleum Corp. and Stanolind Oil & Gas Co.'s No. 1 Black, SE cor. NW Section 27-8-8, rig; C. J. Wrightsman's No. 1 Commercial Trust Co., SE NE NE Section 28-8-8, cellar and pits; Manahan Oil Co.'s No. 6 Chapman, SE NE SW Section 10-7-8, cellar; Elliott and Shell Petroleum Corp.'s No. 4 Pickens, CEL SE NW NE Section 15-7-8, machine; Phillips Petroleum Co. and Gypsy Oil

(Continued on Page 89)

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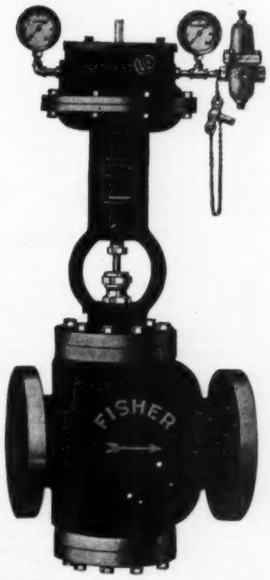

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Two Disappointments in Miller County, Arkansas; Wildcatting Activity in Northern Louisiana

By J. R. CRUMPTON
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., June 18. — The Miller County area in the southwestern part of Arkansas reported the two outstanding disappointments in this division during the past week. Although still the most active spot in that district and destined to get a further play during the next few months, two of its most promising wildcats developed barren results on test. E. L. Young, trustee's No. 1 Patterson, Section 5-19-28, failed to have a show of oil or gas when bailed to within 700 feet of bottom at 3,655 feet. At this stage of testing, the 6⅝-inch casing collapsed at 2,406 feet, and the operators have not decided at this writing whether to attempt to fish the collapsed casing out of the present hole or to skid over and drill another well. It is highly probable that the latter course will be pursued. The well recently cut a 6-foot core, 2½ feet of which was saturated oil sand, the remainder composed of sandy shale with ash at the bottom. Northeast of the Young test and along the same fault line, J. K. Wadley, trustee's No. 1 Dickert, Section 24-17-27, was abandoned as dry without a test at 4,502 feet. There was no show of either oil or gas encountered anywhere along the log. The top of the Nacatoch was reported at 1,752 feet, no check on the Woodbine, with the top of the red beds encountered at 3,550 feet. A few miles south of the Bloomburg area, W. F. Lacey is making good progress on his No. 1 Gibson, Section 30-19-27. The top of the Nacatoch was logged at 1,853 feet and the test is drilling at 2,600 feet.

Eight Rigs Running

A total of eight rigs are running in Miller County, the remainder in the vicinity of the proven field east of Texarkana. The Arkanva Oil Corp.'s No. 1 E. L. Beck, Section 33-15-26, is waiting for standard rig to pump from 2,929 feet, and the same company's No. 2 Beck has set 10-inch surface casing at 182 feet and drilling at 1,685 feet. Both of these wells were formerly listed as C. E. Murdock, Inc. Lee Timberlake's No. 1 E. L. Beck, Section 33-15-26, is drilling at 2,512 feet, and John Wrather's No. 1 E. V. Olivet, Section 4-16-26, is drilling at 2,215 feet. The Magnolia Petroleum Co. is rigging up on its No. 3 Olivet, Section 4-16-26. East of the Miller County Field in Lafayette County, C. V. Lenz' No. 1 L. A. Foster, Section 9-15-25, is coring at 2,802 feet, and Douglas Lown's No. 1 Camp, Section 14-14-23, is drilling in chalk at 1,792 feet. Mrs. R. K. Jones and others' No. 1 Davis, Section 28-16-14, Union County, reports coring 3 feet of oil sand from 2,612-15 feet, the total depth, and arrangements are being made to make a drill stem test. This well was originally started as a deep test in the proven area. In the Urbana Field, the Marine Oil Co.'s No. 3-E Thompson, Section 10-8-13, is waiting for standard rig to pump after setting 7-inch casing at 3,522 feet. Eight feet of sand was cored to the total depth of 3,535 feet. In the same area, the McCreslenn Oil Co.'s No. 2 Atkins, Section 3-18-13, is coring at 3,563 feet.

The Arkansas district reported three oil wells in as many different fields. The Texarkana Oil Corp.'s No. 1 H. E. Beck, Section 34-15-26, is pumping 300 bbls. from 2,923 feet. The well is in the proven area of the Miller County Field. In Ouachita County, on the flank of the Stephens Field, L. L. McDonald's No. 1 Arnold & Doyle, Section 23-15-16, is a 20-bbl. pumper from 2,131 feet, and in the Urbana Field, Union County, Marine Oil Co.'s No. 1-B Union Saw Mill Co., Section 2-18-13, is pumping 85 bbls. daily from 3,559 feet.

NORTH LOUISIANA

This district experienced a dull and uneventful week, reporting only three new locations and five completions. All of the new locations staked were in proven territory in three separate fields. The Bayou State Oil Corp. is arranging to drill No. 1 Connell in Section 15-21-14, Caddo Parish, and the other two new operations were in the Monroe gas field, Ouachita Parish, and the Zwolle Field, Sabine Parish. The best well of the week was J. T. Reeves', formerly listed as Preston & Stinson, No. 1 A. E. Slay, Section 9-9-13, in the Converse Field. The well was completed flowing 285 bbls. daily from 1,995 feet. This area also furnished two other small producers. Earl P. Halliburton's No. 2 Barr, Section 15-9-13, is pumping 20 bbls. of oil and 220 bbls. of salt water from 2,016 feet after plugging back from 2,020 feet. George L. Pace's No. 5 F. Greer, Section 32-8-11, Zwolle Field, is a 20-bbl. pumper with a small amount of salt water from 2,400 feet. Laurel Petroleum Co.'s No. 2 Frost Lumber Co., Section 21-9-13, failed to make a commercial producer after a good show of oil, and was abandoned at 1,975 feet. One of the deepest tests drilled in the North Louisiana district was finally abandoned as a dry hole. R. L. Gay's No. 2 Long Bell Lumber Co., Section 10-8-13, was dry and abandoned at 4,757 feet after plugging back from an old total depth of 7,155 feet. The test, which is located north of the chalk rock proven area in the Zwolle Field, was started more than two years ago and had its best show of oil and gas in the Oolitic lime around the abandoned depth.

Wildcatting Activity

Most of the wildcatting activity in this district is centered in Natchitoches, Bossier and DeSoto Parishes. In the former parish, five tests are active over a wide area and much geophysical work is being carried on. The most active spots are around Marthaville, the Spanish Lake area, the Black Lake area and in the vicinity of Powhatan, northwest of the town of Natchitoches. Several shallow wells have been drilled in the immediate vicinity of the latter area, all of which had gas blowouts of various estimates but salt water intruded, killing the flow. One test near Marthaville, drilled below the 4,000-foot level, reported a good gas condition, but the well was finally junked without a fair test. The Missouri Drilling Co.'s No. 1 Brown Lumber Co., Section 5-10-10, has spudded in and will be one of the wildcats in this parish to be closely watched. The test is drilling at 415 feet. Plummer & McDaniels' No. 1 Walmsley, Section 45-10n-8w, is drilling at 2,885 feet. This test is located on a 6,000-acre block and has a contract to drill to 4,000 feet. Roy A. Raines and others' No. 1 I. D. Raines estate, Section 28-9-10, in the Marthaville area, is rigging up.

DeSoto Parish has 12 active rigs, several of which have set a string of casing to test the shallow chalk horizon. Two of the tests seem assured of being some kind of producers, one a gas well and the other a small oil well. S. J. Barber No. 1 Tom Haton, Section 4-11-11, on the flank of the old Naborton Field, is arranging to set a string of casing to test an estimated flow of 5,000,000 ft. of gas, developed on drill stem test from 2,645 to 2,734 feet. Sunrise Oil Co.'s No. 1 Wemple, Section 14-12-11, is building standard rig to pump with 1,800 feet of oil in the hole from a total depth of 2,665 feet. A deep test near Longstreet in the western part of the parish, near the East Texas line, is carefully coring ahead. E. T. Oakes' No. 1 Bryant, Section 30-13-15, has reached a total depth of 5,215 feet.

Active drilling in the Converse and Zwolle Fields has decreased considerably during the past month, giving added impetus to wildcatting in the district in search of new production. Many operators are in search of a sand producing horizon off the Zwolle and Converse structures, which, they believe, feeds the oil found in the chalk rock crevices in those areas. It is rumored that one or more deep tests will be drilled in the proven area of these fields, but past results hardly warrant such operations.

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

AVOYELLES PARISH

Haas & Stokes' No. 1 Lindstrum Land Co., 690 ft. S, 980 ft. E, NW cor. Sec. 34-1n-6e. Set 12-in. 40 ft.

BIENVILLE PARISH

Hibeltha Oil Co.'s No. 1 Woodward, 300 ft. S, 600 ft. E, NW cor. Sec. 26-15-9. Drlg. 2,100 ft.

BOSSIER PARISH

Bossier O. & G. Co.'s No. 1 Sherrill, 300 ft. S and W, NE cor. Sec. 13-9-12. S.D.; W.O. 2,261 ft.

Ford & Hanover's No. 1 Cryer, 330 ft. S and W, NE cor. NW SW Sec. 25-19-12. S.D. 875 ft.

Howard & Baird's No. 1 Gold, 150 ft S and E, NW cor. Sec. 36-20-13. Rigging up.

McKinney & Stewart's No. 1 Nattin, 470 ft. W, 620 ft. S, NE cor. Sec. 22-22-14. S.D. 2,865 ft.

Moffitt et al's No. 1 Antrim, 330 ft. N and W, SE cor. SW NE Sec. 26-22-12. Rigging up.

Producers O. & G. Co.'s No. 1 Werner, 660 ft. N and W, SE cor. Sec. 7-17-11. Drlg. 3,377 ft.

Producers O. & G. Co.'s No. 1 Leviston, 660 ft. N and W, SE cor. Sec. 13-16-12. Drlg. 150 ft.

CADDO PARISH

Ark.-La. P. L. Co.'s No. 1 Rodessa Land Co., 1,290 ft. N, 645 ft. W, SE cor. Sec. 23-23-16. Coring 5,608 ft.

Ark.-La.-Tex. O. & G. Co.'s No. 1 Simon. 330 ft. N and E, SW cor. Sec. 15-20-15. Bailing 1,560 ft.

Nick Babare's No. 1 Lindsey, Sec. 34-19-16. Drlg. 600 ft.

W. T. Bell et al's No. 1 Bostick, 1,820 ft. E, 660 ft. N, SW cor. Sec. 12-22-16. Set 7-in. 2,448 ft.; T.D. 2,520 ft.

Burkett O. & G. Co.'s No. 1 Lindholm, 400 ft. S and E, NW cor. NE SE Sec. 15-17-14. S.D. 1,046 ft.; repairing rig.

A. D. King, tr.'s No. 1 Roach, 641 ft. E, 375 ft. N, SW cor. SE Sec. 4-14-16. S.D. 2,128 ft.

Producers O. & G. Co.'s No. 1 Bayliss, Sec. 3-18-16. Rigging up.

Simplex Oil Co.'s No. 9 Youree-Randolph, 660 ft. S and W, NE cor. SE Sec. 13-20-15. Set 10-in. 98 ft.

A. F. Tarrier's No. 1 Muslow Oil Co., 500 ft. N, 330 ft. E, SW cor. NW SW Sec. 3-22-15. Set 6-in. 1,360 ft.; drlg. 1,370 ft.

CALDWELL PARISH

Terrell & Price's No. 1 La. Central Lbr. Co., 300 ft. N, 200 ft. W, SE cor. NW NE Sec. 18-11-3e. Drlg. 2,840 ft.

CLAIBORNE—SUGAR CREEK

United Gas Public Service Co.'s No. 1, 1,390 ft. N, 2,890 ft. E, SW cor. Sec. 32-20-5. Setting 9-in. 4,175 ft.

DE SOTO PARISH

L. H. Alderson's No. 1 Peek, SE cor. NW NE Sec. 25-11-13. S.D. 1,698 ft.

Berry Oil Co's No. 1 Wemple, Sec. 14-12-11. W.O.S.R. 2,665 ft.

R. E. Collins' No. 1 Thigpen, 515 ft. N, 970 ft. E, SW cor. NW NE Sec. 29-15-12 Coring 2,520 ft.

Dempsey & Manziel's No. 1 Thigpen, 375 ft. S, 330 ft. W, NE cor. SW NE Sec. 33-13-13. S.D. for wtr. 1,605 ft.

Gaskill et al's No. 2 Guy, 370 ft. S and W, NE cor. NW SE Sec. 3-11-13. Setting 6-in. 1,270 ft.

Hirschfield-Bailey's No. 1 Youngblood, Sec. 9-11-14. S.D. 1,502 ft.

Geo. M. LeGrande's No. 1 Fulmer, 200 ft. N and W, SE cor. NW SW Sec. 1-11-16. Set 7-in. 1,400 ft.

J. S. Tuffree's No. 1 McGill, 450 ft. N, 150 ft. W, SE cor. SW SE Sec. 1-10-13. S.D. 2,125 ft.

MOREHOUSE PARISH

James A. Noe's No. 1 Dalton, 3,445 ft. N, 805 ft. W of common cor. Sec. 41-21-5e. Set 6-in. 2,268 ft.

Zeiger & Bacon's No. 1 Crossett, 400 ft. N, 300 ft. W, SE cor. Sec. 41-23-6e. Drlg. 2,635 ft.

NATCHITOCHES PARISH

Missouri Drlg. Co.'s No. 1 Brown Lbr. Co., 400 ft. N, 330 ft. W, SE cor. Sec. 5-10-10. Set 10-in. 40 ft.; drlg. 400 ft.

Penn Sou. Pet. Co., Inc.'s No. 1 Chopin Lbr. Co., 275 ft. N and W, SE cor. NE SW Sec. 4-5n-5w. S.D. 3,500 ft.

Plummer & McDaniel's No. 1 Walmsley, SE SW Sec. 45-10n-8w. Drlg. 2,885 ft.

OUACHITA PARISH

Ark.-La. P. L. Co.'s No. 8 McEnery, 1,420 ft. N, 1,700 ft. W, SE cor. Sec. 21-19-4e. Drlg. 2,028 ft.

Ark.-La. P. L. Co.'s No. 9 McEnery, Sec. 4-18-4e. Set 10-in. 118 ft.; drlg. 2,165 ft.

Carbons Consolidated's No. 4 Cole, 662 ft. S, 1,969 ft. W, NE cor. Sec. 36-20-4e. Drlg. 2,140 ft.

RED RIVER PARISH

Kincaid & Kelly's No. 1 Ober, 315 ft. N, 267 ft. W, SE cor. NW SE Sec. 5-14-10. Set 10-in. 84 ft.

A. D. Mytiler's No. 1 La. Delta Pecan Co., 1,700 ft. N, 160 ft. E, SW cor. Sec. 27-13-11. S.D. 857 ft.

Oynett et al's No. 1 Thomas, 330 ft. S and E, C Sec. 34-13-8. S.D. for fuel 740 ft.

(Continued on Page 94)

Daily Average Production

Estimated daily gross production of companies for the week ending June follows:

NORTH LOUISIANA

	Bbls.
Caddo, light	4
Caddo, heavy	1
Converse	1
Cotton Valley	
DeSoto and Red River	1
Elm Grove	
Haynesville	1
Holly	
Homer	2
Pleasant Hill	
Sarepta-Carterville	
Urania	2
Zwolle	4
Total	25
Total last week	25
Difference	

SOUTH ARKANSAS

Champagnolle	1
El Dorado	2
Lisbon	
Miller County	
Nevada	
Smackover, light	2
Smackover, heavy	19
Stephens	
Urbana	2
Total	31
Total last week	30
Difference	

California Production Shows Substantial Increase; State Potential 58,295 Barrels Over May

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., June 18.—State production showed a substantial increase during the week and for several days has been running greatly in excess of the prescribed allowable of 500,300 bbls. a day. Long Beach is the principal offender with an overage of approximately 10,000 bbls. per day. Several other fields are also out of line but in most of these cases subsequent underage later in the month will offset the excess registered during the first two or three weeks. Some of the excess production, which was recorded during the week is due to the delay incident to the preparation of the allowable schedules for the month as operators underproduced during the first week of June and are now making up the additional amount to which they were entitled during the period of underproduction.

The Central Committee of California Oil Producers, the regulatory body charged with the responsibility of allocating the amount which each field will be allowed to produce, has approved a schedule which gives the state a potential daily production of 1,310,065 bbls. This is 58,295 bbls. per day in excess of the potential for May which was 1,251,770 bbls. The substantial increase in potential daily production reflects the completion of a large number of new wells in several fields. During the past month operators completed seven new wells in the Kettleman North Dome Field and consequently the potential of this field was substantially increased. The seven new wells showed an aggregate initial daily production of 56,256 bbls. and the committee stepped up the potential of the North Dome from 369,015 bbls. to 402,260 bbls.

San Joaquin Production

Potential daily production of San Joaquin Valley Fields was increased 49,140 bbls. raising the total potential from 641,910 bbls. to 691,050 bbls. per day. The potential of the coastal fields was increased 9,130 bbls. per day while Los Angeles Basin fields were increased only 25 bbls. daily. The aggregate potential in the coastal group was 136,595 bbls. per day in May and 145,725 bbls. for June. The most important changes in the coastal section were at Elwood where potential was stepped up from 36,500 bbls. per day to 42,840 bbls. and at Ventura Avenue where the potential was increased from 37,940 bbls. to 70,285 bbls. per day.

The Mountain View Field showed a nice increase in potential production considering the fact that the big parade has not yet started because operators are retarding development in the interest of harmony and in compliance with the development program approved by the petroleum administrator. During May, this field was given a potential of 9,165 bbls. per day but the completion of four new wells during the past few weeks has increased the June potential to 15,950 bbls. The four new wells completed in the Mountain View Field during May showed an aggregate initial daily production of 6,484 bbls. Potential daily production of the Huntington Beach town lot section was reduced from 94,155 bbls. to 91,785 bbls. while the potential of Long Beach was increased 760 bbls. per day which boosted the potential up from 106,500 bbls. to 107,260 bbls. per day. Santa Fe Springs was given an increase of 450 bbls.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	June 3		May 27			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Fuel oil	475,015	67,859	238,573	34,082	6,895,102	732,704
Diesel and gas oil	.....	.....	.....	.....	931,159	1,035,064
Gasoline	150,440	21,491	118,675	16,954	2,779,524	3,525,961
Kerosene	.....	.....	.....	.....	552,406	417,054
Other finished oil	.....	.....	.....	.....	15,171	42,814
Other unfinished oil	.....	.....	.....	.....	.....	72,584
Foreign exports—						
Crude oil	72,555	10,365	104,330	14,904	3,344,515	3,164,472
Fuel oil	141,154	20,165	31,309	4,473	5,276,406	3,223,284
Diesel and gas oil	.....	.....	.....	.....	1,713,861	1,529,382
Gasoline	.....	.....	.....	.....	1,696,108	2,624,277
Kerosene	.....	.....	.....	.....	774,399	822,813
Other finished oil	.....	.....	.....	.....	3,529	.....
Other unfinished oil	.....	.....	.....	.....	127,271	34,547
Coastwise-domestic—						
Crude oil	140,053	20,008	.....	.....	4,285,413	4,264,249
Fuel oil	.....	.....	.....	.....	4,373,103	4,351,827
Diesel and gas oil	.....	.....	4,925	704	354,059	659,205
Gasoline	76,731	10,962	184,725	26,389	4,703,995	5,181,520
Kerosene	.....	.....	.....	.....	74,418	95,618
Naphtha distillates	.....	.....	.....	.....	.....	27,651

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Fuel oil	.....	.....	60,655	8,665	110,650	.....
Diesel and gas oil	.....	.....	.....	.....	448,113	280,531
Gasoline	.....	.....	.....	.....	72,625	500,966
Kerosene	.....	.....	.....	.....	197,498	482,430
Lubricants	.....	.....	.....	.....	18,331	16,400
Foreign exports—						
Crude oil	.....	.....	65,940	9,420	803,155	831,722
Fuel oil	32,977	4,711	27,040	3,863	724,408	299,291
Diesel and gas oil	17,075	2,439	.....	.....	679,154	582,129
Gasoline	61,788	8,827	132,375	18,911	1,574,402	1,935,217
Kerosene	28,729	4,104	.....	.....	377,226	449,883
Lubricants	.....	.....	.....	.....	72,395	67,145
Other finished oil	.....	.....	.....	.....	2,760	3,745
Other unfinished oil	.....	.....	.....	.....	5,750	19,166
Coastwise-domestic—						
Fuel oil	35,341	5,049	32,371	4,624	1,624,299	1,329,093
Diesel and gas oil	.....	.....	.....	.....	95,371	166,162
Gasoline	14,724	2,103	14,871	2,124	1,582,264	1,555,308
Kerosene	.....	.....	.....	.....	48,112	2,751

Montebello

Texas Co.'s No. 4 Barry in the Montebello Field of Los Angeles Basin came in wet on a production test from the Cruz zone at 6,943 feet and preparations are under way to recement the 8⅝-inch water string at 6,900 feet. Flow of salt water in this well was somewhat of a surprise as the company had cored 49 feet of what appeared to be an excellent oil sand. A water witch was run after the test and indications pointed to a defective water shut off. In the meantime the company is drilling two other projected deep sand wells. The Universal Consolidated, discoverer of the deep Cruz zone in the Montebello Field, is still working on No. 1 Cruz, but has not yet had any luck in recompleting the well since plugging back to the productive horizon after running into bottom water. Standard, St. Helens and Fullerton Oil Co. all made normal footage in their respective projects during the week.

Three wells were put on production in the Dominguez Field of Los Angeles Basin. No. 12 Hellman of the Union was returned to production flowing 705 bbls. of 32.3 gravity oil after the hole had been redrilled and deepened from the first to the second Callender zone at 4,452 feet. Union finished No. 34 Callender flowing 715 bbls. of 32.5 gravity oil per day from 5,830 feet. This well was finished with a 4¾-inch liner including 589 feet of perforated and 5,178 feet of 2½-inch tubing. Shell completed No. 54 Reyes flowing 2,177 bbls. of 33.1 gravity oil and 1,970,000 feet of gas per day from 5,597 feet after the hole had been finished with a 4¾-inch liner carrying 732 feet of perforated. Both Shell and Union are scheduled to list additional completions within 10 days. No. 28 Hellman, which the Union listed as a completion last week, failed to maintain the rate of production and is rated as a gas well doing 5,000,000 feet and 130 bbls. of oil per day.

Mountain View

The Hubro Oil Corp. completed No. 1 Noble-Petrol in the Mountain View Field early in the week but the output was somewhat below expectations. This new well, bottomed at 5,875 feet but plugged back to 5,854 feet, was finished flowing 270 bbls. of 22.1 gravity oil per day. No. 1 Noble-Petrol was completed with a 6⅝-inch liner including a series of perforations. The liner had 73 feet of perforated at the bottom, then 41 feet of blank pipe and then 123 feet of perforated on top of the 41 feet of blank. Hogan Petroleum's No. 1 Mid-State, completed at 5,845 feet and finished with a 4¾-inch liner including 118 feet of perforated, came in flowing at the rate of 3,000 bbls. per day but bridged over and stopped flowing within a short time. The company re-entered the hole and is swabbing for production with a good possibility the well will be back on production.

On the Wharton and Porter-Day leases, Hogan Petroleum is rigging up offsets to be drilled north of Barnsdall's No. 1 Mott completed as a commercial producer a month or so ago. Both of Hogan Petroleum's offsets are nearer the top of the structure and should show commercial production. Barnsdall has beaned back No. 1 Mott to approximately 145 bbls. per day in conformity with the curtailment program. General Petroleum is building a rig on the Brantly lease in Section 14-30-28. Union has spudded in No. 2 Kernco in the extreme western section and is making good progress on No. 1 Wible which has passed the 4,435-foot level. Standard's No. 1 Nichols flowed for an hour at the rate of 2,750 bbls. per day but died and is now cleaning out. Mohawk has No. 1 Mabry in the pay at 5,660 feet and has started rig construction for No. 1 Vineland in Section 24-30-28.

Kettleman Hills

The Kettleman Hills North Dome Association completed No. 36-20-J in the North Dome early in the week flowing 5,692 bbls. of 36.8 gravity oil and 7,833,000 feet of gas per day from 8,331 feet. This well was originally drilled to 8,700 feet but was plugged back to 8,331 feet and brought in from that depth. Kenda's No. 32-28-J, a recent completion doing 7,500 bbls. per day from 8,000 feet, established an actual potential of 11,437 bbls. per day just before being beaned back in accordance with the curtailment agreement. In addition, the well showed 17,414,000 feet of gas. Kenda is now making a potential production test on No. 67-20-J from 8,205 feet. It was finished after being plugged back from 8,560 feet and looks good for at least 4,000 bbls. although it will in all probabilities show

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well, location—	S.T.R.	Depth	Status:
Vanco Dev. Co., No. 1 Artesia, Los Angeles Co.	25- 3-12	rig	suspended
Woodward Oil Co., No. 1 Athens, Los Angeles Co.	12- 3-14	rig	rigged up
Clark & Miller, No. 1 Hermosa, Los Angeles Co.	31- 3-14	rig	suspended
Dominguez Oil Co., No. 1 Dominguez, Los Angeles Co.	24- 3-13	4,770	suspended
Quinn, J. B., No. 1 Dominguez, Los Angeles Co.	3- 4-13	4,587	redrilling
Nudson, T. T., No. 1 Inglewood, Los Angeles Co.	17- 2-14	2,940	plug bottom
Scientia Oil Co., No. 1 Inglewood, Los Angeles Co.	7- 2-14	1,139	sd. sh. drilling
Standard Oil Co., No. 1 Inglewood Deep, Los Angeles Co.	7- 2-14	2,975	O.S. drilling
Pacific Western, No. 1 Inglewood Deep, Los Angeles Co.	8- 2-14	3,218	sd. sd. drilling
Plymouth Oil Co., No. 1 Inglewood, Los Angeles Co.	8- 2-14	4,040	O.S. cemented
Wilshire, No. 2 Potrero Deep, Los Angeles Co.	27- 2-14	7,339	sd. sh. drilling
Community Oil Co., No. 1 Montebello, Los Angeles Co.	34- 1-11	7,447	suspended
Universal Consd., No. 1 Montebello Deep, Los Angeles Co.	5- 2-11	7,505	plug 7,060
Universal Consd., No. 2 Montebello Deep, Los Angeles Co.	5- 2-11	6,950	suspended
Universal Consd., No. 3 Montebello Deep, Los Angeles Co.	5- 2-11	7,680	suspended
Texas Co., No. 1 Montebello Deep, Los Angeles Co.	6- 2-11	6,943	flow salt wtr.
Standard, No. 1 Montebello Deep, Los Angeles Co.	6- 2-11	5,000	reaming
St. Helens, No. 1 Montebello Deep, Los Angeles Co.	6- 2-11	3,800	sd. sh. drilling
Fullerton Oil Co., No. 1 Montebello Deep, Los Angeles Co.	6- 2-11	1,998	sd. sh. drilling
Frontier Oil Co., No. 1 Pico, Los Angeles Co.	7- 2-11	1,500	cemented
Midfield Oil Co., No. 1 Pico, Los Angeles Co.	19- 2-11	4,817	suspended
Barstow Oil Co., No. 1 Saugus, Los Angeles Co.	35- 5-16	2,136	suspended
Barstow Oil Co., No. 2 Saugus, Los Angeles Co.	35- 5-16	mtl.	building rig
International Dev. Co., No. 1 Saugus, Los Angeles Co.	34- 5-16	1,594	sd. sh. drilling
B. & L. Drlg. Co., No. 1 Newhall, Los Angeles Co.	14- 3-16	rig	rigging up
Black Eagle Oil Co., No. 1 Huntington, Orange Co.	tideland	3,935	fishing d/p
Nuoil Co., No. 1 Newport, Orange Co.	29- 6-10	6,455	reaming
Explorers Oil Co., No. 1 Fairview, Orange Co.	9- 6-10	904	suspended
Speik Oil Co., No. 1 Fairview, Orange Co.	9- 6-10	1,102	suspended
Placentia Dev. Co., No. 1 Placentia, Orange Co.	31- 3- 9	4,531	redrilling
Mid-Rich Drlg. Co., No. 1 Atwood, Orange Co.	26- 3- 9	1,153	sd. sh. drilling
Union, No. 1 Coyote, Orange Co.	22- 3-10	2,647	sd. sh. drilling
Bardeen Pet., No. 1 Coyote, Orange Co.	13- 3-10	5,203	plug 5,020
Bridger, J., No. 1 Coyote, Orange Co.	15- 3-10	3,703	sd. sh. drilling
Severns Drlg. Co., No. 2 Coyote, Orange Co.	24- 3-11	7,272	suspended
Severns Drlg. Co., No. 3 Coyote, Orange Co.	24- 3-11	rig	rigging up
Great American Pet., No. 1 Chino, San Bernardino Co.	18- 2- 8	2,642	suspended
Great American Pet., No. 2 Chino, San Bernardino Co.	18- 2- 8	3,100	fishing d/p
Tehama Pet., No. 1 Santa Ana Canyon, San Bernardino	32- 2- 8	1,295	repair mach.
San Diego Pet. Co., No. 1 Chula Vista, San Diego Co.	32-18- 2	3,961	sd. sh. drilling

a much higher potential. The Association began drilling operations on two wells during the week and is building rigs for three more.

Standard Oil Co. is making preparations to begin drilling operations on six wells in the North Dome and most of them should be under way within 30 days. Superior Oil Co. picked up the top of the Temblor in No. 8 Huffman, the last well to be drilled on this lease and it should be completed within a few weeks. Union is rotating in No. 1 Amerada-King at 6,600 feet and expects to have it on production within 30 days. The company also spudded in No. 7 King which should be completed before the close of the current year. No. 8, the final well to be drilled on this lease, will be started upon completion of No. 6 and if the program goes according to schedule Nos. 6, 7 and 8 will be finished before December 31. On the Lillis-Welsh lease, Union has been experiencing considerable difficulty with the 7-inch water string and may be forced to adopt a different policy as attempts to redrill the hole have not met with any degree of success up to the present. In the Middle Dome of Kettleman Hills, Middle Dome Corp. is rotating at 6,400 feet in No. 58-19-V. Actual work on this well is being done by the Petroleum Securities, which will retain possession of it until all costs have been liquidated. Upon completion the well will become the property of the Middle Dome Corp.

Promising Wildcat

The status of the Western Gulf's wildcat in Fresno County has some of the boys guessing. The company recently landed a string of 6⅝-inch casing at 8,508 feet, which tends to indicate something of more than ordinary importance has been found. The test is on property leased from the S. P. Land Co. in Section 15-17-15. This wildcat will bear close watching despite the expressed opinion of several geologists that it does not have a chance. There is no reason why the test should not be just as favorably located from a geological standpoint as wells south of the Coalinga Field. For some unexplainable reason geologists have adhered to an old expression that there is no oil north of Coalinga. There is a good chance that some day this belief will be disproven and it would not be suprising if Western Gulf proved to be the prospector that showed this to be erroneous. Western Gulf has a total of a little more than 100,000 acres under lease.

Standard Oil Co. has been having its hands full in the McKittrick district during the week as its wildcat blew out and flowed for some time at the rate of 25,000,000 feet of gas per day from 2,930 feet. The crew killed the well and is coring to determine what lies ahead. This well, although started as a test to determine the possibility of developing commercial gas production, is expected to be drilled in search of another gas zone or oil sand if conditions warrant. Its performance tends to indicate the probable existence of a substantial accumulation of commercial gas and if that is the case there is every indication one or more additional horizons may be found productive. The well is in the center of a full 640 acres and competitive drilling is out of the question.

Up in the Santa Maria district, in the coastal area, Union Oil Co. is making good progress in No. 1 Moretti, a wildcat in Section 24-10-34, and the outcome should be determined within 30 days as it is in what is expected to be shallow territory. Last week the company encountered some extremely hard formations and drilling was somewhat retarded. The formation chewed up eight bits in 48 hours in making less than 30 feet but fortunately this hard formation was not very thick. In the area west of East Coyote, Union is drilling in a wildcat at 2,540 feet but has not reached depth enough to pick up the anticipated pay.

Mount Poso

Modoc Oil Co. completed No. 2 Johnson in the Mount Poso Field of Kern County during the week but it was good for only 95 bbls. of 15.7 gravity oil per day from 1,602 feet. The well sanded up a few days after completion and the company may get a better well after it has been cleaned out as it evident that if it sanded up it was bothered with sand when completed. Union Oil Co. has material on ground for five new wells to be drilled in the Mount Poso Field, most of them to be drilled in the immediate future. These shallow wells are not being undertaken to stimulate production but to build up an adequate supply of oil which will be available when needed. The oil produced in the Mount Poso Field is rather heavy and suitable for delivery to eastern buyers of fuel oil. Fuel oil has shown a very strong position during the past 60 days with the price showing every indication of strengthening. Texas Co. is drilling two new wells in this field, General Petroleum one and Associated Oil Co. is making preparations to spud in No. 1 Fortine.

Cascade Oil Co. finished No. 2 in Section 23-39-27 in the Fruitvale Field of Kern County early in the week flowing 454 bbls. of 19.9 gravity oil cutting 3.6 per cent. Cascade's new producer was bottomed at 3,780 feet and finished with a 4¾-inch liner including 265 feet of perforated. In the North Belridge Field two new wells are being prepared for immediate work and both of them, Associated's No. 5 Result and Continental's No. 5 Result, should begin making hole within a few weeks. Several new wells are scheduled to get under way in the Midway-Sunset Field within 30 days. Included are three new projects of the Standard and two new wells of Honolulu Oil Corp.

Ventura Avenue

Two wells were given production tests in the Ventura Avenue Field but one failed to come up to expectations and was subsequently killed. This was Shell's No. 68 Taylor, brought in flowing 636 bbls. of 24.5 gravity oil cutting 28 per cent. It was killed to undertake corrective work to remedy the water problem. Shell's No. 80 Taylor was a good well, however, as it showed an initial daily production of 886 bbls. of 31.5 gravity oil and 996,000 feet of gas. This well was finished in the shallow zone at 5,573 feet and is flowing through a one-half inch bean under a pressure of 780 pounds on the casing and 395 pounds on tubing.

Two new wells are getting under way in the Goleta gas field of Santa Barbara County and should be spudded in shortly. These are Standard's No. 2 Chase & Brice and Shell's No. 1 Bishop. In the Capitan Field, General Petroleum is rotating in No. 9 Erburu and Shell is rigging up rotary drilling equipment in No. 3 Covarrubias preparatory to an early spud. Signal Oil & Gas Co. has suspended work on No. 2 on tideland permit No. 98 in the Elwood Field of Santa Barbara County and is making preparations to start work on No. 3 which will be located immediately south of No. 2 which ran into so much mechanical trouble the company was never able to complete it. No. 2 showed some production of gas but failed to yield any oil in the Sespe which has been found productive by Barnsdall. Up in the Santa Barbara Mesa Field, Fred Cole is building a new rig on the Young property and expects to have this project under way within 15 days. Cole's No. 1 Perkins, which was brought in a few weeks ago, is holding up in good shape since being pinched back to 400 bbls. per day.

Inglewood

Several new wells are expected to be completed in the Inglewood Field of Los Angeles Basin during the next several months. Since approval of the development program covering this field operators have been making preparations to comply with its provisions especially with respect to the amount of drilling permissible. Standard has three wells nearing completion which should be tanking oil within the next month. Pacific Western Oil Co. has just passed the 3,200-foot level in No. 17 Rubel, a projected Miocene test, and the outcome of drilling will no doubt be watched with considerable interest because of its probable effect on the future status of this field. Plymouth Oil Co. has picked up the pay in No. 1 Pollard which is standing cemented with the water string landed at 3,950 feet.

The Santa Fe Springs Field has taken a new lease on life due to new drilling by Union and General Petroleum and reconditioning work by several other operators. Ring Petroleum Co. has taken over the Patterson lease originally held by Petroleum Midway Oil Co. and is building a new rig over No. 4 abandoned several years ago. Santa Fe Extension Oil Co. has taken over the Rhode lease and is building a new rig over No. 2 also abandoned several years ago. Two wells were completed in the Long Beach Field during the week but neither showed substantial production. Rawco's No. 1 Decker, was brought in pumping 111 bbls. of 27.4 gravity oil per day from 4,840 feet and W. O. Dye recompleted his No. 1 Signal pumping 305 bbls. of 28.4 gravity oil daily after plugging back the hole from 4,911 feet to 4,790 feet.

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IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well, location—	S.T.R.	Depth	Status:
General Pet., No. 9 Capitan, Santa Barbara Co.	32- 5-20	1,621	sd. sh. drilling
Shell Oil Co., No. 3 Capitan, Santa Barbara Co.	32- 5-20	rig	rigging up
Fields, O. C., No. 1 Casmalia, Santa Barbara Co.	13- 9-35	1,504	sd. sh. drilling
Fairview Oil Co., No. 1 Purisima, Santa Barbara Co.	18- 7-34	2,612	bl. sh. drilling
Barnsdall-Rio Grande, No. 8 Doty Elwood, Santa Barbara	15- 4-29	4,868	redrilling
Signal O. & G. Co., No. 2 Elwood, Santa Barbara Co	tideland	5,415	suspended
Signal O. & G. Co., No. 3 Elwood, Santa Barbara Co.	tideland	....	material
East Elwood Pet. Co., No. 1 Elwood, Santa Barbara Co.	14- 4-29	2,399	suspended
Shell Oil Co., No. 1 Goleta, Santa Barbara Co.	20- 4-28	....	material
Hastain & Stone, No. 1 Goleta, Santa Barbara Co.	9- 4-28	2,701	suspended
Union, No. 2 Santa Maria, Santa Barbara Co.	24-10-34	1,516	sd. sh. drilling
Richfield, No. 1 Rincon, Ventura Co.	17- 3-24	2,557	redrilling
Woodrow Pet., No. 1 Rinson, Ventura Co.	4- 3-24	7,612	suspended
Continental, No. 3 San Miguelito, Ventura Co.	22- 4-24	3,041	hd. sd. drilling
Hancock Oil Co., No. 1 Fillmore, Ventura Co.	13- 4-19	3,357	suspended
Oil Ridge Oil Co., No. 1 Fillmore, Ventura Co.	1- 4-19	1,000	gr. sd. drilling
Piru Oil Co., No. 1 Piru, Ventura Co.	14- 4-18	198	sd. drilling
Williamson & Donaher, No. 1 Simi, Ventura Co.	36- 3-18	1,031	sd. sh. drilling
American Drlg. Co., No. 1 Simi, Ventura Co.	6- 2-17	263	sd. sh. drilling
Prop. Service Corp., No. 1 Lloyd, Ventura Co.	24- 3-24	1,030	sd. sh. drilling
Laing & Jacobs, No. 1 Shiells, Ventura Co.	32- 4-19	701	suspended
Kirk, W. A., No. 1 Sulphur Mountain, Ventura Co.	21- 4-22	1,954	rebuild. rig
Mosher, J. W., No. 1 Santa Paula, Ventura Co.	22- 4-21	2,070	sd. sh. drilling
Las Posas Pet., No. 1 Las Posas, Ventura Co.	22- 3-20	6,754	sd. sh. drilling
International Oil Developers, No. 1 Conejo, Ventura Co.	33- 2-20	3,068	suspended
Shell Oil Co., No. 1 Gould Hills, Kern Co.	21-29-21	4,760	sd. sh. drilling
Standard Oil Co., No. 1 McKittrick, Kern Co.	15-30-22	2,930	gas blowout
Casa Mira Oil Co., No. 1 Belridge, Kern Co.	29-28-20	4,982	cleaning out
General Pet., No. 1 South Belridge, Kern Co.	30-28-21	11,377	prod. test
Union Oil Co., No. 18 North Belridge, Kern Co.	36-27-20	7,770	sd. sh. drilling
Standard, No. 1 North Belridge, Kern Co.	36-27-20	4,528	rigging up
Associated, No. 1 Lost Hills, Kern Co.	2-26-20	7,858	suspended
Inland Pacific, No. 1 Semi-Tropic, Kern Co.	29-25-21	1,118	suspended
Ohio Oil Co., No. 1 Buena Vista Lake, Kern Co.	31-31-26	7,957	test up. show
Caravel Pet., No. 1 Edison, Kern Co.	19-30-30	1,960	sd. sh. drilling
Alta Oil Co., No. 1 Union Avenue, Kern Co.	6-30-28	6,457	plug 4,040 ft.
Mountain View Dev. Co., No. 1 Mountain View, Kern Co.	12-30-28	1,250	cleaning out
Gilmore-Snyder Oil Co., No. 1 Mountain View, Kern Co.	24-30-28	4,873	sd. sh. drilling
Union Oil Co., No. 2 Mountain View, Kern Co.	23-30-28	4,070	gr. sd. drilling
Union Oil Co., No. 3 Mountain View, Kern Co.	15-30-28	mtl.	building rig
Hogan Pet. Co., No. 4 Mountain View, Kern Co.	29-30-29	5,845	2,000 b/d rate
Standard, No. 1 Mountain View, Kern Co.	19-30-29	5,843	cleaning out
Hoyt, Otis, No. 1 Mountain View, Kern Co.	19-30-29	rig	rigging up
Monterey Exploration, No. 2 Edison, Kern Co.	22-30-29	mtl.	building rig
Jergins Trust, No. 1 Edison, Kern Co.	22-30-29	rig	rigging up
Commanche Oil Co., No. 1 Commanche, Kern Co.	15-32-29	3,430	sd. sh. drilling
Tejon Ridge Oil Co., No. 1 Commanche, Kern Co.	23-32-29	rig	rigging up
Badger Oil Co., No. 1 Wheeler Ridge, Kern Co.	31-11-19	6,000	suspended
Russ Oil Synd., No. 1 Kingsburg, Fresno Co.	28-12-11	4,004	suspended
Bergman, Harry, No. 1 Kingsburg, Fresno Co.	12-12-11	6,138	milling
Western Gulf, No. 1 S.P., Fresno Co.	15-17-15	8,896	sd. sh. drilling
Union, No. 1 Lillis-Kettleman, Fresno Co.	24-21-16	10,944	recrill 10,138
Texas Co., No. 1 Alcalde, Fresno Co.	1-21-14	....	location
Farrell Pet., well No. 1, San Luis Obispo Co.	18-31-12	1,220	sd. sh. drilling
Willett Oil Co., No. 2 Cholame, San Luis Obispo Co.	10-25-15	920	sd. sh. drilling
Commonwealth Consd. Gas Co., No. 1 Tulare Lake, Kings	21-22-20	1,580	redrilling
Armadillo Oil Co., No. 1 Tulare Lake, Kings Co.	32-22-20	1,760	sd. sh. drilling
Tulare Basin Oil Co., No. 1 Tulare Lake, Kings Co.	2-23-19	1,192	recemented
Tulare Basin Oil Co., No. 2 Tulare Lake, Kings Co.	2-23-19	1,200	suspended
Kettleman Pac. Oil Co., No. 1 Tulare Lake, Kings Co.	11-23-16	863	sd. sh. drilling
Weller, Carl, No. 1 Tulare Lake, Kings Co.	11-23-16	808	sd. sh. drilling
Douglas, J. M., well No. 1, Monterey Co.	36-22- 9	3,620	br. sh. drilling
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	5- 2-10	4,760	suspended
Pacific Northern Oil Co., No. 1 Guinda, Yolo Co.	23-12- 3	6,760	suspended
Buttes Oilfields Co., No. 1 Marysville, Sutter Co.	35-16- 1	2,731	gas—shut in
Buttes Oilfields Co., No. 2 Marysville, Sutter Co.	35-16- 1	4,350	ancesite, drlg.
Milham Exploration Co., No. 1 Tracy, San Joaquin Co.	5- 4- 5	5,073	hd. sh. drilling
Tehama Pet., No. 1 Murdock, Glenn Co.	10-22- 5	620	suspended
Pure Oil Co., No. 1 Chowchilla, Madera Co.	7-10-14	3,342	sd. sh. drilling

Michigan Fields

(Continued from Page 66)

don and Ide Oil Co.'s No. 1 Stephens, Section 36, Home Township.

Isabella County

More than 20 tests were drilling or starting in Isabella County outside the Broomfield-Sherman Township gas area with two wells, one in Section 30, Vernon Township, and the other in Section 19, Denver Township, nearing completion in the Vernon and Leaton Fields.

Jasmid Oil Co.'s No. 1 Anton Wezensky, NW NW SE Section 30-16n-4w, a Vernon Township outpost, made a light show of oil with water and was being tested for possible paying production in the Dundee.

Seven Vernon tests were drilling at less than 1,500 feet.

Three Denver Township wells were drilling between 2,000 and 3,000 feet. McClanahan Oil Co. was starting No. 1 J. Demski, Jr., SW SW NW Section 27. The Wittmer company was at work on two new wells in Isabella Township, Isabella County.

Midland County

Three Midland County tests outside the Porter area were nearing completion last week in three different townships.

Ogemaw County

Seven tests are active in Ogemaw County where Webber Oil Co. has taken over production and leases of the Pure Oil Co.

McClanahan Oil Co.'s No. 1 O. A. Guilford, NE NE E NW Section 29-22n-2e, West Branch Township, Ogemaw County, drilled to 3,755 feet, will be plugged back to the Dundee and treated for a show of oil after striking only a light show of gas in the lower stratum. Six other Ogemaw wells were active.

Wildcat Shows

Four wildcat shows of oil, two in Saginaw County and the others in Ionia County, were being tested last week. Prairie Oil Development Co.'s No. 1 Moss, Section 19, North Plains Township, Ionia County, had reached 2,957 feet, or 38 feet in the Dundee, when shut down to move back the boiler before testing further. Drilling was resumed. Brant & Marion Prospecting Co.'s No. 1 Ward, Section 12, Marion Township, Saginaw County, was reported testing a show in the Berea formation, while the Crabon Oil Co.'s No. 1 Berg, Section 26, Birch Run Township, had a show in the upper Traverse. White Star Co. was testing a show in the Dundee in its No. 1 State Bank, Section 26, Birch Run Township. A fourth Saginaw County wildcat is being drilled by the Chapin Oil Co. in Section 16, Chapin Township.

Casing has been run in the Powers Oil Co.'s No. 1 Begole, Section 31, Flint Township, Genesee County, 7 miles west of Flint, and completion of the Dundee is anticipated soon.

New Locations

Seventeen new locations were reported during the last week in Michigan, 12 through new permits and five from other sources. The permits covered locations in nine townships of six counties. Midland County locations were as follows: Porter Township—Pure Oil Co.'s A No. 4 Iva E. Bond, SW SW SW Section 7-13n-1w; No. 2 G. L. Huff, SE SE SE Section 15, and No. 2 F. Howland, NW NW NW Section 23. Greendale Township—Pure's A No. 3 Joe Novak, SE SE SE Section 7-14n-2w, and No. 2 J. M. Coates, NW NW NW Section 17, and Sun Oil Co.'s No. 1 Stephen Vallender, C SW NE Section 11-15n-1e, Lincoln Township.

Six others in as many townships in five different counties were: Daily Crude Oil Co.'s No. 1 Gustavson and others, SE NW SW Section 2-12n-6w, Home Township, Montcalm County; Columbia Oil & Gas Co.'s No. 1 Edna Hutchison, C SW SW Section 14-13n-8w, Hinton Township, Mecosta County; Fred W. Craft's No. 1 David Gerwalds, NE NW NE Section 9-8n-9e, Oregon Township, Lapeer County; Gordon Oil Co.'s No. 1 Christian Smith, NE NW SE Section 4-8n-11e, Arcadia Township, Lapeer County; Alvin Weber's No. 1 Martin Wazbinski, SE SW NW Section 10-15n-4e, Kawkawlin Township, Bay County, and D. F. Jones' No. 1 Chester W. Swan, SW SW SE Section 1-14n-6w, Broomfield Township, Isabella County.

Jake Henninger is reported to have completed a block in Nottawa Township, Isabella County, on which he will start a test. Owosso Oil & Gas Co. will start the first of a series of tests on a 15,000-acre block in Shiawassee County this week. The first well will be on the James Van Pelt Lease in Rush Township.

Central West Fields

(Continued from Page 66)

at 4,640 feet. In Section 27, same township, Lyons & Co.'s No. 2 test on the William and Anna Barr farm, is showing for a gasser at 4,593 feet.

Coshocton County

A fair sized producer for Coshocton County was Preston Oil Co.'s No. 4 on the William Frazee farm, Section 5, Perry Township, which showed an initial of a 76-bbl. producer at 3,287 feet. Same company is drilling No. 1 Bertha Barrett farm in the three-quarters section in Newcastle Township.

In Knox County, Lacknett and others' on the William Adams farm, Section 3, Monroe Township, is a duster at 2,165 feet. In Brown Township, same county, Upham Gas Co. has rig up for its No. 1 Sam Baker farm, Section 6.

In Vinton County, Brown Township, Ohio Fuel Gas Co.'s No. 1, on the Allia Bay & Co. tract, Section 30, is a failure at 940 feet.

In Lawrence County, R. Straub is drilling No. 1 on the Caughlin Hunt farm, Section 35, Windsor Township. Charter Oil & Gas Co. is drilling No. 1 on the Dennis Burnett farm, Section 19, Mason Township, same county. Ohio Fuel Gas Co. is drilling No. 1 on the J. B. Benson farm, Section 20, Union Township, same county.

In Guernsey County, Ferguson & McCollough's No. 3 Fred R. Foraker farm, Section 20, Willis Township, is drilling, and Ohio Fuel Gas Co. is drilling No. 1-5,810 on the D. H. Newbitt farm, Section 21, same township. J. L. Miller and others are drilling on the F. N. Gray farm, Section 5, Cambridge Township.

In Belmont County, William Patton and others are drilling No. 15 on the Earnest J. Peffer farm, Section 34, Somerset Township.

In Stark County, East Ohio Gas Co. has rig in for No. 1 on the George Leatherman farm, Section 11, Jackson Township. Same company has No. 1 drilling on the James Boren farm, Section 13, same township, and has a rig up on the John W. Essig farm, same township.

In Harrison County, Pittsburg Oil Co. is reported drilling on the S. B. Reeves farm, Section 10, Freeport Township.

In Fairfield County, Paumier Gas Co. abandoned the location on the William M. Gantz farm, Section 16, Cannon Township. City Natural Gas Works is drilling No. 3 on the J. J. Shaw farm, Section 10, Pleasants Township, and has a rig for No. 4 S. A. McClurg farm, Section 36, Berne Township.

In Richland County, Ohio Fuel Gas Co. staked a location on the I. C. Ward farm, Section 17, Worthington Township.

FORT NORMAN OPERATIONS

Imperial Oil, Ltd., is resuming its refining operations in the far northern field below Fort Norman, on the Mackenzie River. Recently Ronald McKinnon and a party of six left Edmonton to reopen the Fort Norman refinery for the season. The crew is being followed by $10,000 worth of additional refining equipment. No new drilling is contemplated in the immediate future, Nos. 1 and 2 Discovery having a potential production aggregating around 140 bbls. a day, which is thought ample to meet the requirements of the north country at present.

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Much New Work Started in Kansas, Scattered in Most of State's Oil Producing Counties

By JAMES McINTYRE

Good wells in Rice County and a sudden simultaneous rush to start new operations featured the news from Kansas in the past week. Nearly if not all the oil producing counties from Greenwood west were favored with new work initiated in the seven days since the last report, some of the locations being wildcat.

Kansas Production

Estimated daily production of important pools in Kansas for the week ending June 16 and for the preceding week was as follows:

Pool—	Barrels June 16	Barrels June 9
Hollow	11,820	11,330
Ritz-Canton	13,570	13,625
Voshell	6,945	6,720
Johnson	2,050	1,922
Sedgwick County	7,920	7,885
Nikkell	5,345	5,145
Ellsworth County	4,140	3,277
Barton County	1,340	1,201
Rice County	13,600	11,008
Reno County	4,050	4,259
Ellis County	825	791
Kingman County	1,505	1,852
Stafford County	898	985
Russell County	6,219	6,105
Greenwood County	12,250	12,250
Butler County	17,900	17,990
Other pools	19,898	20,849
Total	130,275	127,195

Rice County

Lario Oil & Gas Co.'s No. 1 McFarland, SE NE SW Section 7-20-9w, deepening in silicious lime at 3,268-83 feet, to a total depth of 3,296 feet, pumped 1,070 bbls. in 24 hours. Originally it made 715 bbls. in 24 hours. It will be acidized. No. 2 McFarland of the same owner, SW NE SW Section 7-20-9w, found silicious lime at 3,270 feet and pay at 3,286 feet from which 30 bbls. per hour was swabbed. Drilling was continued.

Empire Oil & Refining Co.'s No. 5 Heckel, SE NW SW Section 18-20-9w, Rice County, was completed after flowing 677 bbls. in 24 hours from silicious lime at 3,329-36½ feet.

Ramsey and others' No. 1 Lansing, CNL SW NW Section 32-19-9w, was acidized at 3,238-51 feet and produced 771 bbls. in a 24-hour test. Completed.

Gypsy Oil Co.'s No. 1 Steckel, CWL SW SE Section 31-19-10w, was acidized at 3,313-37 feet and made 202 bbls. in 24 hours. Completed.

Gypsy Oil Co.'s No. 1 Christopher, NE NW NE Section 6-20-9w, made 1,605 bbls. in 24 hours from silicious lime at 3,226-33 feet. Completed.

Lario Oil & Gas Co.'s No. 1 Foot, SW cor. NE Section 7-20-9w, flowed 464 bbls. in 24 hours following an acid treatment at 3,273-3,300 feet. Completed.

Hollow and others' No. 1 Boldt, SW NW SW Section 23-18-10w, was dry and abandoned. It was acidized in silicious lime at 3,285-3,329 feet, total depth 3,333 feet, with no results.

Elwell and others' No. 1 Springer, NE cor. NW Section 35-18-10w, had silicious lime at 3,265-3,301 feet but it was barren of oil and the hole was abandoned.

New work in Rice County reported in the past week included Torey & Feister's No. 2 Brinkman, NW SE NW Section 32-19-9w, rig; Ramsey's No. 3 Ira, SW NE NW Section 32-19-9w, rig; Sinclair Prairie Oil Co.'s No. 1 Sharpe, SE NW NE Section 7-20-9w, rig on ground.

Sedgwick County

Shawver and others were building rig for No. 1 Russell, SE cor. Section 17-28-1e, Sedgwick County. George Dickey was building rig for No. 2 Nolan, NE cor. Section 2-28-1e, and Phillips Petroleum Co. had material on the ground for No. 1 Nolan, NW cor. Section 20-28-1e. Magnolia Petroleum Co. had cellar dug for No. 1 W. K. H. Trust, NE SE NE Section 19-27-2e. L. H. Wentz was drilling at 150 feet in No. 6 Bright, NE cor. NW Section 1-26-1w.

Magnolia Petroleum Co.'s No. 2 Vickers, SW cor. NW NW Section 20-27-2, was completed in chat at 3,207-09 feet, total depth, and started at 170 bbls. per day.

E. B. Shawver's No. 1 Brookings, SW cor. Section 16-28-1e, had chat at 3,062 feet, and chat pay at 3,076-93 feet, total depth 3,099 feet. It started at 390 bbls. per day, and was completed.

McPherson County

Boyle & Grossman completed No. 3 Smith, SW NW NW Section 29-19-1w, McPherson County, at 3,417-34 feet. It was acidized and started at 749 bbls. per day.

W. C. McBride's No. 2 Finkle had Viola lime at 3,385-87 feet, and acidized it. The well started at 72 bbls. per day and was completed.

Helmerich & Payne's No. 5 Russell, C SW cor. NE Section 23-19-2w, is a rig; Regina Oil Co.'s No. 1 Young, C SW SW Section 9-20-1w, a rig moving in; Deiter & Younker's No. 1 Thomas, SE NE SW Section 26-19-2w, rigging up standard tools; Phillips Petroleum Co.'s No. 5 Garrett, SE NE NE Section 30-19-1w, a rig.

Harvey County

Acre Oil & Gas Co.'s No. 1 fee, C SW SW NW Section 20-22-3w, an old well deepened from 3,514½ feet to 3,547 feet, ran into more production, the well starting at 887 bbls. per day.

Murphy, trustee, and Shell Petroleum Corp. were building rig for No. 2 Neufeldt, SE cor. NW Section 21-21-3w.

Greenwood and Woodson Counties

Bennett & Able's No. 4 Matthewson, CEL NW NW Section 31-22-10, Greenwood County, is a 15-bbl. completion, after a shot at 2,577-94 feet.

Polhamus & Smith's No. 1 Sample, CSL SE Section 35-25-10, was completed in lime at 1,971-93 feet. It started at 65 bbls. per day.

Ward McGinnis' No. 5 Beal, SW cor. Section 28-23-11, was dry and abandoned at 1,965 feet.

Morrison and others' No. 1 Tollman, SW NW SW Section 15-28-11, was dry and abandoned at 1,196 feet.

Franco Central Oil Co.'s No. 9 Wilkerson, NW SE SW Section 6-25-9, was dry and abandoned at 2,229 feet.

Spencer and others had machine in for No. 3 Thrall, SE NE NE Section 17-24-12. T. K. Simmons had machine rigged up for No. 1 Disney, SW cor. NE Section 35-22-10. Hal Oil Co.'s No. 8 Wershing, NW cor. Section 24-26-9, was drilling at 800 feet.

Saline County

Signal Oil Co. has made a location for No. 2 Taylor, CEL SE Section 26-15-3w, Saline County.

Trego County

Central Commercial Oil Co.'s No. 2 King, SE SW NE Section 20-13-21w, Trego County, drilled to 4,453 feet. Top of the silicious lime was found at 4,169 feet. The hole was plugged back to 3,703 feet and acidized, a showing having been found at 3,685-90 feet. The well produced 18 bbls. of oil and 20 bbls. of water and not being a commercial producer at the depth was abandoned. The silicious lime showed no oil.

Sumner County

Material is on the ground for Wentz Oil Corp. & Continental Oil Co.'s No. 1 Bellesley, C NW NW SW Section 5-33-4w, Sumner County.

Ellsworth County

Derby Oil Co. has material in for No. 2 Stoltenberg B, SW cor. NW Section 22-16-10w, Ellsworth County. Sinclair Prairie Oil Co. has rig up for No. 4 Stratman, SE NE SW Section 1-17-10w. Eldorado Refining Co. and others made a location for No. 9 Stratman, SW NW SE Section 1-17-10w.

Marion County

Harwood Oil Co. has a rig up for No. 3 Cowman, NW SE SW Section 11-17-4, Marion County.

Butler County

Gypsy Oil Co. has a rig up for No. 23 Orban, SE NE NW Section 11-26-4, in the old Towanda Pool in Butler County to test for the shallow lime production. Harry Garden has rig on the ground for No. 1-A Crowley, SE SW SE SW Section 14-28-5.

Reno County

National Union Oil Co. had rig on the ground for No. 1 Unnamed, C SE SE Section 14-23-4w, Reno County. Olsen Drilling Co. and Shell Petroleum Corp. had rig up for No. 2 Goring, a twin, NE cor. NW Section 25-23-4w.

The Atlantic Oil Producing Co.'s wildcat test in Reno County, No. 1 Phillips, CEL S NW NE Section 22-22-6w, was abandoned as a failure. It had chat at 3,511 feet, Hunton lime at 3,885 feet; Viola lime at 3,943 feet, Wilcox sand at 3,986 feet and drilled to 4,080 feet. It found no oil showings.

Russell County

Ben Meyers and others abandoned the location for No. 1 Krug, C NE NE SE Section 27-14-14w, Russell County.

J. A. Aylward and others have rig up for No. 1 Holland, NE cor. Section 28-13-14w. H. H. Blair and others made a location for No. 1 Fink, SW NW SE Section 26-15-13w.

Empire Oil & Refining Co.'s No. 2 Grug, SW NW Section 24-15-14w, is a rig; Sinclair Prairie Oil Co. and Slick-Urschel, Inc.'s No. 1 Sellens, SW cor. Section 25-15-13w, cellar; same operators' No. 1 Sellens, NE cor. Section 35-15-13w, cellar.

Barber County

Lario Oil & Gas Co. have rig on the ground for No. 1 Whelan, C NW Section 32-31-11w, Barber County.

Kingman County

W. C. McBride, Inc., is rigging up standard tools for No. 1 Woolridge, NW cor. NE Section 16-27-7, Kingman County.

Rush County

The Texas Co., Skelly Oil Co. and others made a location for No. 1 Mohr, C NE Section 15-18-16w, Rush County.

Barton County

Stanolind Oil & Gas Co. and Gypsy Oil Co. were moving in material for No. 5 Stoltenberg, NW cor. SW Section 22-16-10w, Barton County.

Wildcat Operations in Kansas

Week Ending June 16

(Descriptions are East unless marked otherwise)

BARTON COUNTY

Company, farm and location—
Atlantic O. P. Co.'s No. 1 Straub, C SE NW Sec. 36-18-11w ..... Rigging up.
Harris & Haun and J. Brook's No. 1 Dietz, NE SW Sec. 21-16-15w ..... Location.
National Ref. Co.'s No. 1 Ingersoll, C NW NE Sec. 2-19-13w ..... T.D. 1,810 ft.; fishing.
Skelton et al's No. 1 Ott, C SE SE Sec. 16-19-14w ..... P.B. to 3,355 ft.; acidized; pumping wtr.
Walter Shearen et al's No. 1 Kempler, SE NE NE Sec. 31-18-11w ..... S.D. 250 ft.

BUTLER COUNTY

DeGenther et al's No. 1 Marnane, NW cor. Sec. 29-26-3 .. Cellar.
L. C. Hay et al's No. 1-A Bolin, SE SW SE Sec. 36-26-6 .. K.C. lime 2,159-62 ft.; acidized.
Van Meter et al's No. 1 Moore, NE cor. Sec. 5-26-4 ..... Rig.

CLAY COUNTY

Seidel Bros.' No. 1 Youkers, C 8½ SE NW Sec. 21-9-4 .. Spudded; fishing.

DICKINSON COUNTY

Dutch Oil Co.'s No. 1 Philipps, C NE NW Sec. 15-15-1e .. S.D. 1,335 ft.

ELK COUNTY

Diller O. & G. Co.'s No. 1-A Keys, C E½ SE NE Sec. 26-31-10 ..... Oil showing 1,644-50 ft.
Lerke et al's No. 1 Mason, C NE NE Sec. 5-31-10 ..... H.F.W. 1,564 ft.; S.D.
B. Taylor et al's No. 1 Wilson, SE NE SE Sec. 5-28-10 .. Machine.

FINNEY COUNTY

National Ref. Co. et al's No. 1 Smith, C SE SW Sec. 2-25-33w ..... T.D. 1,800 ft.; S.D. for orders.

HARPER COUNTY

R. G. Berry's No. 1 Anthony, C SW SW Sec. 17-31-9w .. Drlg. 2,800 ft.

HARVEY COUNTY

Foraker et al's No. 1 Hiett, SE SW NE Sec. 34-24-4w .... Cellar.
Wenzel et al's No. 1 Schrag, NW SE Sec. 24-22-3w ..... Rig.
Lassen, Bruce et al's No. 1 Joseph, NW NE Sec. 13-24-2 ..... Spudded and S.D.

KINGMAN COUNTY

Kessler et al's No. 1 Bollinger, SW NW SW Sec. 12-28-5w ..... Drlg. 3,440 ft.
Stanolind-Amerada's No. 1 Holtje, NE SW Sec. 16-26-4w ..... Rig.

LYONS COUNTY

Arkman & Baker's No. 1-A Hind, NE NW Sec. 20-21-12 .. Drlg. 1,075 ft.

McPHERSON COUNTY

Continental Oil Co. et al's No. 1 Graber, NE NW Sec. 33-21-1w ..... Hunton 3,274-94 ft.; swabbed 300 bbls. 24 hrs.
Marileen Oil and Goering Bros.' No. 1 Decker, NW cor. SE Sec. 20-18-1w ..... Set 12-in. csg. 1,400 ft.; drlg.

NEMAHA COUNTY

Partland & McKenna's No. 1 Sudbeck, SW NW NW Sec. 20-1-12 ..... Top granite wash 490 ft.; S.D.

OSAGE COUNTY

Jim Edwards' No. 1 Detrich, C NW SE Sec. 21-14-15 .... Machine.

(Continued on Page 89)

Application of Solvent Refining to the Pennsylvania Grade Oil Industry

By W. B. McCLUER
Petroleum Refining Laboratory, State College, Pa.*

Two years ago the Petroleum Refining Laboratory started to obtain information along two specific lines of research. First, to find out what improvements the refiner could anticipate by perfecting present refining methods and, second, to conduct a fundamental investigation indicating the extent and degree to which solvent refining could be applied effectively to Pennsylvania oils. It was not the purpose to find a way to get into the solvent refining business but rather to learn what could or should be done if and when competitive oils actually approached Pennsylvania quality.

Early in this work it became apparent that significant changes could be produced in the final quality of Pennsylvania oils by efficient vacuum fractionation. The application of vacuum fractionation to the manufacture of Pennsylvania oils is not new to the region since several refineries already have installations of this design. Oils of practically any commercially desired viscosity may be made directly from reduced stock by equipment already available or on the market. Data obtained by means of the laboratory vacuum unit have indicated conclusively that the flash and fire tests and Conradson carbon residue of Pennsylvania oils may be very appreciably improved. This fact is not surprising since it follows basically from existing data on the volatility characteristics of various oils. As a specific illustration, oils having S.A.E. 30 specifications have been made directly from bright stock. These oils have flash and firepoints 30° to 50° F. above those of similar grades if the latter are made by blending 180 neutral and bright stock. Similarly, the Conradson carbon residue of the fractionated oil is approximately one-half that of oils blended to the same viscosity. Physical specifications of a fractionated oil are given in Table 1.

TABLE 1—INSPECTION DATA ON A FRACTIONATED LUBRICATING OIL

Viscosity, S.U. seconds:*	
210° F.	62.2
130° F.	217.8
100° F.	478.0
Gravity, ° A.P.I.	29.0
Flashpoint, O.C. ° F.	485
Firepoint, O.C., ° F.	575
Pourpoint, ° F.	+30
Conradson carbon residue	0.17

*Saybolt viscosities obtained from kinematic viscosities by conversion tables.

Closely fractionated Pennsylvania oils have lower volatility, or higher flash and firepoints, than similar oils produced from other types of crude. The Mid-Continent refiner has approached the flash and fire specifications of Pennsylvania lubricants by employing efficient fractionation methods. There is no basic reason why Pennsylvania oils can not maintain their traditional margin with respect to desirable volatility characteristics. The possibilities of efficient fractionation have by no means been exhausted by Pennsylvania refiners.

The process of vacuum fractionation can be pushed just so far in the economical production of oils of improved specifications. When this point has been reached the Pennsylvania refiner will require other tools to advance his quality differential. It is indicated that solvent extraction is such a tool.

Solvent Extraction

If the refiner decides that he must install solvent refining equipment in order to exceed the specifications of competitive products he will find himself confronted with a choice between two distinct policies. One is that of keeping currently ahead of new products as their merits are demonstrated either by the installation of new equipment or by adding to or modifying older equipment. The other is that of determining exactly the ultimate possibilities of solvent refining and installing his equipment with these possibilities foreseen and understood. This latter policy suggests the possibility that he may be able to create products that not only are better but are substantially different from motor oils as we now know them. It involves the probability that a new field of specialty lubrication may be opened in which he can manufacture products that can not be obtained in quantity from any other type of crude oil.

Substantial improvements can be made without excessive additions to plant facilities at any one time. If, however, the second policy is to be pursued, it is indicated that before the Pennsylvania refiner can install his equipment he must know at least three things: First, the relative efficiency of various solvents commercially available. Second, the relative efficiency of the different types of process equipment with which solvents may be utilized most effectively. Third, an exact knowledge of the physical characteristics of the particular materials which compose his lubricating stock in order that he may determine intelligently the materials to be segregated for the manufacture of desired products.

The information essential, to the first requirement has been obtained. The comparative efficiencies of multiple stage batch countercurrent operation and continuous countercurrent extraction equipment of original design are being investigated thoroughly. The efficiency of the processing method is specifically important to the Pennsylvania refiner since no other refiner is as seriously concerned with efficiency and resulting yields. It must always be remembered that the Pennsylvania refiner starts where other refiners stop. He must employ principles and processes which are in an advanced stage of development in order that his stock losses may not destroy his potential profits.

Study of Characteristics

Another type of information which the Pennsylvania refiner needs in order to make an economical and intelligent application of solvent refining is a precise knowledge concerning the stability and lubricating characteristics of the various materials which are present in Pennsylvania lubricants. This need is specific to and is dictated by the peculiar economic situation prevailing in the Pennsylvania region.

The quality and cost of Pennsylvania crude is high. Present indications are that the refiner can not afford to go into solvent extraction unless he can do one of three things. First, effect maximum improvement with minimum stock loss by employing highly selective solvents in efficient processing equipment. Second, broaden the range of stock which he can process. Third, develop a specialty market as an outlet for the new products which he can make.

Small amounts of materials having viscosity indexes below a minus 150 have been removed from Pennsylvania oils. This may be surprising but it need not be alarming since western oils, when treated in a similar manner, produce materials of much lower characteristics and in larger quantities. Maximum improvements with minimum stock loss can be effected only through the removal of those hydrocarbon materials having specifically low lubricating characteristics. The development of a specialty market is closely related to a more complete understanding of the particular products which can be obtained. Each of these factors hinge on an exact knowledge of the physical, chemical and lubricating characteristics of those materials which compose reduced stock. Information of this nature is inherently difficult to obtain but work along this line is in progress.

Preliminary data indicate that light paraffinic materials may be removed along with heavier naphthenic materials during solvent extraction. These light paraffinic lubricating constituents may be recovered by distillation. It is indicated that fractionation and solvent extraction may go hand in hand for producing good yields of superior lubricants.

Although a substantial fund of basic information is available on the relative efficiency of a large number of solvents, and considerable progress has been made in the investigation and development of processing methods, relatively little is known here or elsewhere regarding the nature and utility of the materials which can be removed thereby. Until this information is collected with considerable exactness it would be unwise to advise the Pennsylvania refiner to risk a substantial investment in solvent refining. This third field of research should be more thoroughly explored.

The fact that vacuum fractionation and solvent refining may go hand in hand for the ultimate production of superior lubricants is important. Just as vacuum fractionation in its advanced form may be employed for producing oils having higher specifications, so the same procedure can be applied for improving the specifications of materials produced through solvent refining. It would be anticipated therefore that plants installed for the closer fractionation of present products would continue to be useful if and when solvent products are manufactured. It is not nearly so certain that any solvent equipment now available might not soon become obsolete.

When it comes to the major question as to whether solvent extraction should be adopted to replace what you now use for refining lubricants, it is our opinion that you can afford to make haste slowly on this question. We know relative solvent efficiency. We are learning method efficiency. We must know what the result we are after is to be before we can judge either the lubricating efficiency or the economic justification of what you would make. In all probabilities you will end with a combination of what you now are doing coupled with an intelligent and discriminating use of solvents.

*Before Pennsylvania Grade Crude Oil Association, State College, Pa., June 15.

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WASHINGTON, D. C., June 18.—One-tenth of the entire population of the United States has no rail service or is without a freight station, records of the Interstate Commerce Commission show. There are at present 45,000 communities that are utterly dependent on motor trucks and buses for communication with the rest of the country.

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Four Locations in Cooper Area, New Mexico; Wildcat Play on Colorado Public Domain

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., June 18.—Four locations were made in the Cooper area, southeastern New Mexico, inaugurating the drilling campaign expected following the completion of a 5,000-bbl. well by General Crude Oil Co. recently. One completion, not yet gauged, was reported in the Hobbs Pool. Ralph Searow's test in western Eddy County, is reported to have shown no water, oil nor gas when plug was drilled. Wildcat in Curry County is ready to spud.

Colorado is expecting a wildcat drilling campaign on the public domain as a result of action being taken by Secretary Ickes to extend permits about ready to expire. Mountain Fuel Supply Co. made a location on the West Hiawatha Dome and La Plata County is to have another test in the Loughollow district.

Wyoming reports a new operation on the Byron Dome by Ohio Oil Co. and a new location in Converse County. There were no completions.

Three completions and two new locations were reported in the Cut Bank Field in Montana. A small gas well was completed in Liberty County and three completions and two new locations were reported in the Kevin-Sunburst Field.

NEW MEXICO

Lea County

Pipe line runs from the Hobbs Pool in May aggregated 1,092,946 bbls., bringing total runs up to 45,170,115 bbls. since proration began. Pipe line runs from the Eunice Pool aggregated 66,028 bbls., and from the Jal Pool, 91,737 bbls.

Cooper Area

The drilling campaign in the Cooper area, or North Jal, predicted when General Crude Oil Co. deepened its No. 1 Meyer, NE cor. SE Section 22-24-36, two months ago and brought it in for 5,000 bbls. of oil a day, is getting under way. Four new locations were announced this week. Stanolind Oil & Gas Co. is drilling one well and General Crude Oil Co. is deepening another, making six active operations.

General Crude Oil Co.'s No. 1 Cushing, SW SE NW Section 23-24-36, a little less than half a mile northeast of its No. 1 Meyers, an old gas well being deepened to the oil pay, was tested the past week, but did not come up to earlier expectations. Its total depth is 3,498 feet, in lime. It was tested through the tubing on a three-fourths' inch choke and flowed 23 bbls. the first hour and 16 bbls. the second hour. It was then tested through a twenty-four-sixty-fourths inch choke and made 5½ bbls. in 30 minutes. It settled to 6 bbls. an hour through the three-fourths inch choke with 2,500,000 feet of gas a day. The gas flow was 8,000,000 feet through the casing. It will be deepened 6 feet before being completed.

The four new locations follow: Humble Oil & Refining Co.'s No. 1 S. R. Cooper, C NW NE Section 23-24-36, half a mile northeast of No. 1 Cushing, digging water well; Phillips Petroleum Co.'s No. 1 Woolworth, NW cor. SW Section 23-24-36, an offset on the east to General Crude Oil Co.'s No. 1 Meyers, which is digging cellar and pits; General Crude Oil Co.'s No. 2 Meyers, C SE SE Section 22-24-36, a location, and Texas Co.'s No. 1 Ike Ogg, C SW NE Section 35-24-36, moving in materials. The last is about 2 miles south and east of No. 1 Meyers and midway between that well and the most northerly well in the Jal Pool.

Stanolind Oil & Gas Co.'s No. 1 Meyers, SE cor. NE Section 22-24-36, an offset on the north to General Crude Oil Co.'s No. 1 Meyers, is waiting on cement after setting 15½-inch at 240 feet with 130 sacks. The 20-inch was cemented at 180 feet with 50 sacks. It began spudding June 2 with machine.

Jal Area

E. B. Guess and others' No. 1-B Conditt, NW NE SE Section 11-25-36, is standing after completing cellar and pits.

Repollo Oil Co.'s No. 1 Stephens, SW cor. NE Section 13-25-36, is fishing for tools at 3,298 feet, total depth. It had a show of gas at 3,170-3,200 feet and a show of oil at 3,227-38 feet. Continental Oil Co.'s No. 13-A-1 Sholes, C SW SE Section 13-25-36, is drilling at 2,826 feet in lime and had a show of oil and gas at 2,692-97 feet.

Eunice Area

Atlantic Oil Producing Co.'s No. 2-B State, C NE SE Section 8-21-36, set the 10-inch at 1,314 feet with 400 sacks and is drilling at 2,151 feet in salt and anhydrite. Continental Oil Co.'s No. 17-A-3 Meyers, C SW NW Section 17-21-36, is bottomed at 1,434 feet in anhydrite and waiting after cementing 9⅝-inch at 1,431 feet with 300 sacks. Repollo Oil Co.'s No. 1 State, NE NW NE Section 19-21-36, spudded to 180 feet in red rock and shut down for orders. Tide Water Oil Co.'s No. 2 Coleman, C NW NE Section 17-21-36, is swabbing in. It topped the Terry at 3,865 feet and drilled to 3,935 feet. The 2½-inch tubing was run to 3,920 feet.

Hobbs Area

Shell Petroleum Corp.'s No. 2-B State, NE cor. NW Section 33-18-38, is a completion, but has not yet been gauged. It was drilled to 4,220 feet in lime and is running the 3-inch tubing to test. Gypsy Oil Co.'s No. 8 West Grimes, NW SW NW Section 32-18-38, fished out 39 joints of drill stem and is drililng ahead at 3,915 feet in lime. Continental Oil Co.'s No. 1 Grimes, SW cor. SE Section 28-18-38, is rigging up rotary, and Skelly Oil Co.'s No. 2 Turner, C NE NW Section 34-18-38, is drilling at 3,760 feet in anhydrite. Repollo Oil Co.'s No. 3 Grimes, SW NW NW Section 28-18-38, is running the 15½-inch to 280 feet, in red rock. It began spudding June 4. Noble Brothers' No. 2 Shell-State, E NE SW Section 24-18-37, topped the Bowers sand at 3,159 feet and is drilling at 3,388 feet. Shell Oil Corp.'s No. 3 Berry, NE cor. SE Section 31-18-38, is drilling at 1,950 feet in salt and anhydrite.

Lea Area

Texas Co.'s No. 1 Lea, SW cor. NW Section 14-20-34, is drilling at 3,599 feet in lime and flowing and swabbing 120 bbls. of oil daily from horizon above 3,579 feet, and its No. 2-B Lynch, C SE SW Section 27-20-34, is drilling by tools at 3,782 feet.

Eddy County

Ralph Spearow and others' No. 1 McClelland, SW NW NE Section 22-22-23, Indian Creek district, in western Eddy County, drilled to 4,865 feet, in lime and shut down in April after running the 6⅝-inch to 4,098 feet to shut off 4,800 feet of water, is reported to have drilled out plug and found no water, no oil and no gas.

Flynn, Welch & Yates' No. 68 State, NW SW NW Section 27-18-28, Artesia area, is drilling at 1,700 feet in anhydrite and shale. Etz, Hammond & Keyes' No. 1 State, C SE SE Section 16-17-28, is a location.

Curry County

George Schoonmaker and others' No. 1 Hart, C SE SE Section 13-2n-32, Melrose district, for which location was released last March, is preparing to spud. It will test a block of 12,000 acres on which the geology was worked out with a magnetometer.

San Juan County

Continental Oil Co.'s No. 35, SE NE SE Section 2-29-19, Rattlesnake Field, is bottomed at 747 feet in sand and has pulled pipe to straight ream and carry. It will go deeper to the third sand.

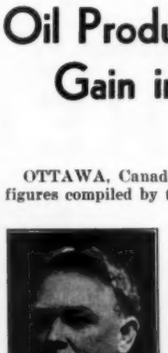
COLORADO

Wildcat operations in Colorado and other states in the Rocky Mountain area, which have been delayed by the holding up of applications for the extension of prospecting permits pending before the Department of the Interior, are expected to be resumed on a considerable scale as a result of the clearing up of the situation at Washington. More than 1,000 applications for permits and extensions were before the department for action. Denver oil men received telegrams the past week from U. S. Senator Joseph C. O'Mahoney, of Wyoming, saying Secretary Ickes had assured him early action will be taken on pending prospecting permits. Almost immediately this action was followed by several applicants receiving notices extensions had been approved. Senator O'Mahoney advised local people it was expected the entire list of pending applications will be cleared up within a month. Oil men give him credit for

Oil Production in Canadian Field Shows Gain in First Four Months, 1934

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

OTTAWA, Canada, June 16.—Official figures compiled by the Dominion Bureau of Statistics show that the output of crude petroleum from all Canadian fields in April totaled 118,890 bbls., compared with 130,046 bbls. in March and 84,974 bbls. in April, 1933. Production for the first four months of 1934 totaled 489,907 bbls., while in the same period last year the total was 328,057 bbls.



Alberta wells in April produced 106,443 bbls., a decline of 10.3 per cent from the March total of 118,728 bbls. Ontario production in April was 11,621 bbls. against 10,307 bbls. in March. The New Brunswick production in April was 826 bbls., compared with 1,011 bbls. in March. In April, 1933, the totals were: Alberta, 74,645; Ontario, 9,494; New Brunswick, 835.

Production of 489,907 bbls. for the four months of 1934 was the highest for that period in any recent year except 1931, when it reached a peak of 649,425 bbls.

Ontario

Near Mabee's Corners in Norfolk County, Ontario, Prairie Oil & Gas Co.'s No. 3, Mrs. Elwin Stilwell farm, has encountered a bed of sulphur 2 feet in thickness. Following the sulphur strike, drilling was continued to 1,135 feet where the gas sand was struck. The sand continued for 28 feet, with about 12 feet of pay. The initial open flow measured 750,000 feet. The Prairie Oil & Gas Co. is headed by E. P. Rowe of Toronto and the drilling contract was handled by David G. Laur of Tillsonburg. The gasser is one of the largest in the Mabee's Corners area.

In the D'Clute Field, Raleigh Township, Kent County, Union Gas Co.'s No. 22 D'Clute, Lot 17, Concession 12, finished a dry hole at 1,900 feet. The location was about 1,000 feet from the once-famous Gurd gusher, drilled by A. T. Gurd and associates in 1902, which for a short time had a reputed production of 1,000 bbls. a day. Union's No. 22 got a small show of oil in the same horizon, with traces of sulphur gas.

Union Gas Co. is starting an important test in Sombra Township, Lambton County, a little west of the Dawn Field. Union's No. 75 is drilling in Lot 27, Concession 13, Sombra, about 800 feet due east of the "old Bradshaw" well.

In the Dawn Field, Union Gas Co.'s No. 3 is being deepened to the Trenton limestone.

In the Brooke shallow oil field, Lambton County, Scotty Miller has finished a test for the Brooke Development Co., organized by Bert and Leo Wilson of Sarnia. Location was on the north end of the Aitcheson farm, Lot 23, Concession 13, Brooke, on which Leo Wilson's No. 1 discovery well was drilled. It got a reputed initial production of 2 bbls. an hour. A new test has been located 500 feet north. A test by the Walker interests at the corner of the Navaho Road and Concession 14 finished a dry hole. The field has now about 10 or 12 producing wells, though practically all the production is reported to be "top show" oil.

In the old Tilbury Field, Ralph Dawson is reported starting a test near Merlin, which will be drilled to the Tilbury sand for gas.

It is reported that Bon Jasperson of Kingsville is planning to drill a new test in Maidstone Township, Essex County, near Belle River.

In Haldimand County, Ontario, William Hussey, drilling for a Detroit syndicate in Seneca Township near Caledonia, has brought in a gasser with initial open flow between 500,000 and 800,000 feet a day. This is one of the largese wells yet drilled in the Haldimand Field.

expediting the action which will open the way for the drilling of numerous wildcats on the public domain. These wells are not expected to interfere with present administration oil plans as comparatively few of them come in as producers, and these will be under the control of the administration. A permit requires the beginning of drilling operations within six months with one well to a depth of not less than 500 feet the first year, and two years in which to drill one or more wells to an aggregate depth of 2,000 feet. While it is believed the department will insist on these drilling requirements, it is doubtful if many of the wells will be completed for some time. It does mean, however, a pronounced increase in exploratory drilling.

Moffat County

Mountain Fuel Supply Co. has released a location on the West Hiawatha structure in its No. 1 C. B. Murdock, SE cor. NE Section 24-12n-101. Materials are on the ground. Same company's No. 4-B Wilson, C NE NW Section 23-12-100, set the surface pipe at 204 feet and is drilling ahead. Texas Co.'s No. 1 Van Schaick, SW cor. Section 19-12-100, is drilling at 220 feet.

Stanolind Oil & Gas Co.'s No. 6 Parkinson, Lot 37, Iles Dome, topped the Frontier at 2,309 feet and is drilling at 2,846 feet.

Routt County

Texas Co.'s No. 5 Carstarphen, NW NE NW Section 5-6n-86, Tow Creek, is drilling at 970 feet. Same company's No. 1 Sampson, SE NE SE Section 2-1s-85, King Mountain, is building rig and digging pits.

Grand County

Colorado Oil Refining Co.'s No. 1 Linke, NE SW SW Section 13-1n-77, Granby district, is drilling at 200 feet in blue shale and will run the 10-inch to shut off water as soon as a suitable landing place is found. Interstate Oil & Refining Co.'s No. 1 Hinman, NE SE NW Section 11-2n-81, Dirt Creek, which has been shut down at 1,997 feet for pipe, is preparing to resume.

Park County

South Park Oil Co.'s No. 1 State, SE cor. SW Section 16-11s-75, Hartsel district, is moving in materials.

Larimer County

Eastman & Deininger's No. 1 Cement, NE SE NW Section 30-5n-69, Loveland district, is standing at 520 feet. It is bottomed in shale below the Muddy.

La Plata County

McGarr Petroleum Corp.'s No. 1 Pinon Mesa Land Co., SE NE NE Section 34-33n-12w, Longhollow district, for which location was announced some time ago, has applied for permit to drill. It is near a small producer from which the company obtains a supply of crude for a local skimming plant.

Prowers County

Trojan Oil & Gas Co.'s No. 1 Lotus Oil, NE NE Section 15-23-46, Lamar district, underreamed 8¼-inch to 3,101 feet, where it was cemented, and is drilling ahead at 3,125 feet in hard lime.

WYOMING

Albany County

Ohio Oil Co.'s No. 1 Chappell, C SE NW Section 28-21-76, East Rock Creek, is drilling at 2,586 feet in the red beds. It had water in the Dakota.

Big Horn County

Ohio Oil Co. has released a location for its No. 2 Byron-Union, C SE NE Section 22-56-97, Byron structure, which will be drilled with rotary. Contract has been let to the Rocky Mountain Drilling Co. It is less than one-third of a mile south of its No. 1 Union Gas, NE cor. Section 22, which was drilled to 5,414 feet in 1930 and completed as an oil producer, being rated at 600 bbls. a day. The old well was supposed to have found the production principally in the Tensleep, topped at 5,340 feet, but some of the oil was believed to be coming from the top of the Amsden.

Crosby & Huntington's No. 1 Denio Milling Co., C Tract 43, Section 15-55-97, Byron district, which has been shut down for two years at 700 feet, has resumed under a contract with H. E. Perlain to complete. It has set casing on top of the Cody formation at 1,100 feet. It is a test in a fault block for light oil expected in the Frontier at 3,500 feet.

Carbon County

Earl W. Reeder, Inc.'s No. 1 Union Pacific, C SW SW Section 19-20-83, Overland Dome, is drilling at 4,720 feet in sandy shale. M. K. Quealy's No. 1 Albelt, SE SW Section 17-25-79, Shirley structure, is building rig. Ohio Oil Co.'s No. 1 Morris, C NW SE Section 6-20-77, Diamond Dome, is spudding at 175 feet. Sinclair-Wyoming Oil Co.'s No. 4 Wertz, SW cor. SE Section 7-26-89, Wertz Dome, is redrilling at 3,100 feet. Old bottom is at 3,541 feet.

Converse County

R. J. Dilger and others' No. 1 Governemnt, S half NE SW Section 33-31-72, Poison Lake district, is spudding at 100 feet. The location is approximately a mile east of a test the same interests drilled to 1,030 feet a few months ago. The three operations on the Shawnee structure are shut down.

Fremont County

Kinney-Coastal Oil Co.'s No. 1 Charterton-Weeks, C SW NE Section 22-3n-1w, Pilot Butte, a gas well drilling deeper from the Muddy, is making hole at 4,006 feet and carrying the 6¼-inch. It is supposed to be close to the top of the Lakota. Monongahela Oil Co.'s No. 1 Wisda, NE SE SE Section 13-28-93, Crook's Gap district, set the 10-inch at 125 feet with 50 sacks and is drilling at 800 feet. Tropic Oil Co.'s No. 1 Government, C SE SW Section 34-27-90, Lost Soldier district, which resumed rerecently at 1,015 feet after being shut down for two years, is drilling at 1,200 feet.

Hot Springs County

California Exploration Co.'s No. 1, NE SE NE Section 12-44-97, Waugh structure, is drilling at 1,200 feet. The 15½-inch was set at 952 feet with 295 sacks. Argo Oil Co.'s No. 10 Ellen, NW SE NW Section 14-44-98, Hamilton Dome, spudded June 5 and is drilling at 460 feet in dark shale.

Henderson Producing Co.'s No. 3-H-9 Government, NW SE NE Section 31-58-99, South Elk Basin, an old well preparing to drill deeper, failed to get a shutoff with the 8¼-inch at 1,765 feet and is recementing. Paul Stock's No. 1 Government, SE cor. NE Section 29-51-100, Oregon Basin, is shut down at 300 feet on account of motor trouble.

MONTANA

Glacier County

Three completions and two new locations were reported in the Cut Bank Field. Montana Power Co.'s No. 1 People's Unit, 880 feet east of C Section 14-33-5w, which had some good shows of oil above the pay, came in as a gas well and was completed at 2,719 feet, total depth, for 4,500,000 feet. The 6¼-inch was set at 2,690 feet and the pay was cut at 2,712-17 feet. The top of the Ellis was at 2,717 feet. This well is located 3 miles northeast of No. 1 Neill and 4 miles southeast of the town of Cut Bank.

Texas Co.'s No. 3 Hinkle, SW cor. NE Section 2-34-6w, which was reported last week having 1,600 feet of oil in the hole from the pay at 2,818-51 feet, proved to be only a small well and pumped 15 bbls. initial.

R. C. Tarrant's No. 1 Getty, C NE SE Section 2-34-6w, was drilled to 2,815 feet, 15 feet into the Ellis, and swabbed 100 bbls. the first 24 hours and 45 bbls. the next 16 hours from the pay at 2,755-2,800 feet.

The two new locations are Lawler & Hoerr's No. 1 Harland, C SW SW Section 5-33-5w, on the eastern edge of the town of Cut Bank, for which cellar has been completed, and A. B. Cobb's No. 3 Walburger, NE SW SE Section 35-35-6w.

Producers Development Syndicate's No. 1 Eniarson, SW NW NW Section 29-32-4w, 3½ miles southeast of the nearest producer, which last week was reported a dry hole, has not been abandoned. It is standing at 2,697 feet, waiting for casing, and will go deeper.

Alberta Pacific Consolidated Oil Co.'s No. 4 Matson, W SW NW Section 14-34-6w, is drilling at 360 feet, and P. B. Anderson and others' No. 1 Anderson, SW cor. NW Section 26-35-6w, is drilling at 2,195 feet. Annand & Hutchings' No. 1 Bonnett, NW cor. SE Section 10-32-5w, is drilling at 1,650 feet.

Consolidated Gas Co.'s No. 2 Ewing, C Lot 4, Section 34-35-6w, has rig on location, and Lon Crumley's No. 2 Weaver, Lot 8, Section 27-35-6w, is drilling at 2,525 feet.

Dakota-Montana Oil Co.'s No. 3 Gilham, NE NE Section 3-34-6w, is fishing for bit at 2,625 feet.

W. M. Fulton and others' No. 2 Haggerty, C NW NW Section 15-34-6w, is drilling at 250 feet.

Indian Oil Co.'s No. 1 Clark (fee), C SE SE Section 4-34-6w, is fishing at 1,050 feet, and the same company's No. 1 Reickhoff, SW SE Section 3-34-6w, topped the Colorado at 620 feet and cemented the 10-inch at 640 feet.

Montana Headlight Oil Co.'s No. 2 Williams, C NE NE Section 11-34-6w, lost its hole at 2,795 feet and will skid rig 60 feet to the north. Same company's No. 2 Yunck, C NW SW Section 1-34-6w, is drilling at 460 feet. Montana Power Gas Co.'s No. 1 Fuller, near C SE Section 17-33-5w, began spudding June 9, and its No. 1 Whetstone, C SE NE Section 7-33-5w, has rig on location.

Nadeau Brothers' No. 3 Van de Mar, W SW NW Section 35-35-6w, is drilling at 725 feet.

Olive Oil Co.'s No. 1 Matson, W NW NW Section 14-34-6w, is building rig and the Par Oil Co.'s No. 3 Haines, SW cor. Section 2-34-6w, is drilling at 2,160 feet.

Santa Rita Oil & Gas Co.'s No. 2 Hardy, SW NE Section 27-35-6w, is drilling at 475 feet, and its No. 2 Whetstone, C NE NE Section 27-35-6w, is spudding at 320 feet.

R. C. Tarrant's No. 4 Britton, C SW SW Section 12-34-6w, has rig on location, and his No. 1 Jones, C SW SE Section 31-34-5w, topped the Colorado at 420 feet and cemented the 10-inch at 475 feet with 75 sacks. His No. 2 Reickhoff, SW NW SE Section 3-34-6w, is building rig.

Texas Co.'s No. 3 Antrim, E SE SE Section 34-35-6w, is drilling at 1,996 feet, and its No. 1 Consolidated Gas Lease, 105 feet west of C Section 15-35-5w, skidded rig and is drilling at 60 feet in new hole. Same company's No. 2 fee, Lot 8, Section 15-35-6w, is standing at 2,853 feet with the 7-inch cemented, and its No. 3 fee, 660 feet south of C Section 15-35-6w, is drilling at 2,067 feet. Texas Co.'s No. 1 Kearns, W SW NW Section 23-35-6w (formerly No. 2 Kearns) is rigging up, and its No. 1 Morrison, SW SE Section 22-35-6w, is drilling in at 2,830 feet. Same company's No. 3 Purdy, W NW SW Section 35-35-6w, is standing at 2,888 feet with the 7-inch cemented, and its No. 1 Schlag, C SW SW Section 26-35-6w, is waiting for spudder to drill in at 2,920 feet.

Carbon County

Ohio Oil Co.'s No. 14 Maddox, C NW NW Section 10-7s-21, Dry Creek, is drilling at 1,429 feet in shale. Minnesota-Flatwillow Petroleum Co. has taken over the Corbett Royalty Co.'s No. 1, SW cor. SE Section 1-6s-23, Blue Creek district, which has been standing at 1,248 feet for several months, and has resumed

LEGAL

Department of the Interior. Notice is hereby given that pursuant to the act of May 23, 1934 (Public No. 248), the lands comprising Fort Morgan Military Reservation, Baldwin County, Alabama, are offered for lease for exploitation of oil and gas and other minerals, to the qualified bidder of the highest amount offered per acre as a bonus for the privilege of leasing the land. The lease will be issued under the provisions of the act of February 25, 1920 (41 Stat. 437), as amended, and the regulations thereunder, for a term of twenty years with right of renewal, on condition that drilling be commenced within three months from date of lease, at a royalty on oil ranging from 12½ to 33⅓ per cent of the production, and a rental payable annually in advance of one dollar per acre. Such lease will contain a provision requiring compliance with the Code and all acts of Congress heretofore or hereafter enacted to regulate or control the petroleum industry. The area to be leased is approximately 493.9 acres, inclusive of the tract of about 29 acres quit-claimed to the State of Alabama, which tract will be included in the lease provided the State consents thereto prior to issuance of the lease. Only sealed bids received by the Secretary of the Interior not later than 10 o'clock a. m. July 24, 1934, will be considered, the outside envelope in which the bids are enclosed to be plainly marked "Bid on oil and gas lease, Fort Morgan Military Reservation." Each bid must be accompanied by certified check on a solvent bank or postal money order for one-fifth of the bonus bid, and the successful bidder must, when required to do so, furnish evidence of his qualifications to hold a lease under the act of February 25, 1920, pay the remainder of his bonus bid and the first annual rental. Bidders are warned against violation of section 59, U. S. Criminal Code, approved March 4, 1909, prohibiting unlawful combinations or intimidation of bidders. The right is reserved to reject any and all bids. (SGD.) HAROLD L. ICKES, Secretary of the Interior.

ROCKY MOUNTAIN: Montana, Wyoming, Colorado, New Mexico. MID-CONTINENT: Kansas, Oklahoma, Texas. GULF COAST: Texas, Louisiana, Alabama. NORTH CENTRAL: Michigan. PACIFIC COAST: California. APPALACHIAN: New York, Pennsylvania. CANADA: Alberta, Saskatchewan, Quebec. MEXICO: Tuxpam Area, Isthmus of Tehuantepec, Northern Tamaulipas.

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operations. It is drilling at 1,260 feet. The 8¼-inch is cemented at 1,120 feet.

Judith Basin County

Fletcher E. Hunt's No. 2 Hobson, NE SW SE Section 20-14-15, Hobson district, is drilling at 305 feet.

Petroleum County

Guy Smith and others' No. 1-A, SE cor. Section 3-13-26, Flatwillow district, is drilling at 1,620 feet.

Liberty County

Western Natural Gas Co.'s No. 2 Shaffer, C SE NE Section 23-37-4e, Whitlash district, was completed for 1,000,000 feet of gas in a sand in the Basal Colorado at 1,575-85 feet. Hole was drilled to 2,051 feet and plugged back to 1,585 feet.

Pondera County

California Co.'s No. 1 Northwestern Properties Co., SW NE SE Section 20-28-4w, North Pondera, set 12½-inch at 189 feet and is drilling at 400 feet.

Fergus County

H. Clark Rowland and others' No. 1 Woodward, SE cor. SW Section 20-14-24, Button Butte district, is underreaming the 6¼-inch at 2,765 feet for a water shutoff. Total depth is 2,800 feet. S. W. Pennock and others' No. 1 Nordheim, NW NE NE Section 6-21-18, Scharf district, is shut down at 347 feet.

Phillips County

British-American Syndicate's No. 1 Hedges, S NW NE Section 17-32-33, Bowdoin gas field, is drilling at 400 feet. Considerable activity is expected in this district and the company is preparing to drill several wells to supply gas for the Fort Peck reclamation project, a public works project under construction by the Government.

Teton County

Ned Cheadlex and others' No. 1 Balsinger, NE SE NW Section 20-27-5w, West Pondera, is drilling at 1,000 feet.

Toole County

Bruce P. Radigan and others' No. 1 McDonough, NW cor. Section 17-33-2e, Devon district, is bottomed at 1,290 feet and running the production string before testing shows of oil at 1,260-65 and 1,285-90 feet. It topped the Kootenai at 1,205 feet. There was only a small show of gas in the base of the Colorado.

Three completions were reported in the Kevin-Sunburst Field. Big West Oil Co.'s No. 1 Goddertz, SE cor. SW Section 35-35-2w, was completed at 1,263 feet for 1,000,000 feet of gas a day. Vanderpas & Hepstad's No. 6 Helgerson, NW SE SW Section 28-35-1w, was drilled to 1,531 feet and plugged back to 1,390 feet and completed for 6 bbls. a day. The Sunburst at 1,290-1,315 feet and the Madison lime at 1,504 feet were dry. Big West Oil Co.'s No. 1 Sorrell, C NW SE Section 7-34-2w, was completed for 1,340,000 feet of gas from the Sunburst at 1,196-1,227 feet.

Big West Oil Co.'s No. 2 Sorrell, C NE SE Section 7-34-2w, is drilling at 1,100 feet, and Lon Crumley's No. 3 Shaw, NE SE SW Section 35-36-2w, is drilling at 1,360 feet. Goddertz Oil Co.'s No. 4 Government, NE NW NW Section 26-35-3w, spudded May 4 and was drilled to 1,680 feet. It had a show of oil in the Ellis sand at 1,665-76 feet and is treating it with 1,000 gallons of acid. There was a show of gas in the Sunburst at 1,390-1,410 feet. Eagle Petroleum Co.'s No. 4 Haugen, SW NW Section 12-35-3w, is drilling at 140 feet.

SOUTH DAKOTA

Lakota Development Co.'s No. 1 Knude, SE SE Section 20-10s-4e, Shiloh district, Fall River County, is fishing for tools at 3,270 feet.

D. J. Carter & Co.'s No. 1, SW cor. Section 26-113-72, Burnstad district, Logan County, is recementing the 6⅝-inch at 2,093 feet.

UTAH

Ramsey Petroleum Corp.'s No. 1 Weightman, SW NE SW Section 18-26-7e, Last Chance district, Emery County, is fishing for tools at 2,040 feet, total depth.

Virgin Dome Oil Co.'s No. 1, NW cor. Section 16-42-14, Harrisburg district, Washington County, is cementing bridge at 3,301 feet. Total depth is 3,401 feet. The 2½-inch tubing will be run to test a show of oil in saturated sand at 3,381-3,401 feet. Escalante Exploration Co.'s No. 2, NW cor. NE Section 19-43-15, Bloomington district, is drilling at 4,010 feet.

Diamond Oil Co.'s No. 4, SE NW Section 16-8s-5e, Utah County, is drilling at 3,540 feet.

Leonora Mining & Milling Co.'s No. 1, C Section 14-9n-8w, Rozel district, north of the Great Salt Lake, which recently was taken over from the Leonora-Raddatz Syndicate under a contract to deepen from 2,230 feet to 3,500 feet, is cleaning out at 2,150 feet.

Gulf Coast Fields

(Continued from Page 69)

Dickinson area and northwest to the Brazoria County line.

Brazoria County

About five miles southeast of Alvin and in eastern Brazoria County, Gillock Petroleum Co. plans to drill a 6,000-foot test in Section 7 of the H.T.&B. Survey. The location has not yet been announced but will probably be near the northeast corner of the survey. The rig will be moved from the Spoor's No. 1 Maco Stewart in Galveston County.

At Manvel in Brazoria County, Texas Co.'s No. 1 Alice & Ritchie, in the N. P. Little Survey, has been completed for 91 bbls. daily flowing through ¼-inch choke. Total depth is 4,030 feet with top of sand encountered at 3,993 feet. Texas' No. 1 W. D. Morrison on the northeastern edge of the field was waiting on cement after plugging back to 3,700 feet. The well was formerly drilled to 5,660 feet.

Goose Creek

At Goose Creek, in Harris County, J. Simmons' No. 1 Kerwin Mitchell, northwest of Mirimar's well, was drilling below 6,100 feet. It is the intention of operators to carry the well to the Cockfield. Gulf Production Co.'s No. 13 State Land Producing Co. has been abandoned at 4,030 feet. Operators perforated 7-inch casing from 4,000-20 feet and it flowed oil, gas and water. Humble Oil & Refining Co.'s No. 80 Simms Smith, deep test for the area, has been spudded and at last report was drilling at 640 feet. Operators have a 165-foot derrick over the hole and it is reported the well will be carried to 12,000 feet.

Sour Lake

At Sour Lake in Hardin County, Alpha Petroleum Co.'s No. 1 J. M. Weiss, southeast offset to Parr's well, was drilling at 5,125 feet in sandy shale and lime. Humble Oil & Refining Co.'s No. 1 Kirby and others in the S. Jackson Survey, had completed derrick. Texas Co.'s No. 308 Fee, also in the Stephen Jackson Survey, had set surface casing and was waiting for cement at 472 feet. Yount Lee Oil Co.'s No. 6 Lynn was drilling salt at 4,949 feet.

Hull Field

Mirimar Oil Co.'s No. 4-B Phoenix in the Hull Field of Liberty County, has been abandoned as dry with total depth of 6,725 feet. This is the deepest test drilled in the field. The area marked 2 completions during the week. Republic Production Co.'s No. 152 Dolbear, was completed for a 100-barrel pumper at 2,211 feet. Gulf Production Co.'s No. 101 Phoenix was carried on down to the deeper sand at 4,195 feet and completed for 328 bbls. daily.

Alpha Petroleum Co.'s No. 1-B Kirby & West, in the G. S. Thomas Survey and about 3,000 feet east of Schwab's No. 2, was preparing to make a drill stem test with total depth of 4,899 feet. It cored the Cockfield 4,809-24 feet and a core from 4,824-64 feet revealed sand with some shale breaks. The upper sand had a show of gas with a taste of distillate while the lower was salty.

Conroe

Five wells were completed during the week in the Conroe Field, bringing nearer the end of the field's drilling program. Gulf Coast Drilling & Production Co.'s No. 25 Keystone Mills was completed for 68 bbls. per hour at 5,030 feet. Humble Oil & Refining Co.'s No. 52 Moore made 77 bbls. per hour through ½-inch choke at 5,126 feet. Humble's No. 65-A South Texas bottomed hole at 5,179 feet and made 49 bbls. per hour through ½-inch choke. Humble's No. 9-B South Texas was completed for 76 bbls. per hour through ½-inch choke at 5,131 feet. Sun Oil Co.'s No. 13 Keystone Mills made 184 bbls. in 2 hours through ½-inch choke at 5,129 feet. The field now has 28 wells making water.

Sweet Lake

At Sweet Lake in Cameron Parish, Pure Oil Co.'s No. 12 Yount Lee Fee, cemented 10¾-inch casing at 7,410 feet, the longest string ever landed in a well on the Gulf Coast. At last report it was shut down at 7,439 feet in shale. The 18⅝-inch was set at 1,061 feet and the 13⅜-inch was cemented at 4,497 feet.

South Louisiana

About 10 miles east of De Quincy in Beauregard Parish, was drilling hard sand at 5,515 feet. Federal Petroleum Co. has staked location for No. 1-B Lutcher Moore Lumber Co. about 6 miles northwest of No. 1 well and near Fields. About 6 miles south of Merryville and in the western part of the parish, Martin & Richardson's No. 1 Cochran was shut down at 5,018 feet.

In the Gillis area of Calcasieu Parish, Union Sulphur Co.'s No. 2 Barbe Estate was drilling below 4,098 feet in shale. The well is on the bank of the Calcasieu River and about a mile south and a little east of No. 1, dry hole.

In Calcasieu Parish, Fred Oil Co.'s No. 1 Faiszt in the SE quarter of Section 26-8s-10w, was drilling at 2,868 feet. On a drill stem test at 2,800 feet it showed only a small amount of gas and salt water.

Shell Petroleum Corp.'s No. 8 Wilbert at White Castle in Iberville Parish, has been abandoned at 4,573 feet where it has been shut down for some time.

On the Valentine Prospect in La Fourche Parish, Barnsdall Oil Co.'s No. 2 Harang Plantation, has been shut down at 7,216 feet in shale and will recheck the area with geophysical instruments.

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TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the question is considered to be confidential.

Questions requiring a discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

Regulations and Specifications for Tractor Fuels

Can you give me the specifications of the so-called tractor fuels now being sold?—R. D. H.

No specifications for tractor fuel have been issued by the U. S. Bureau of Standards or by any of the national societies. Whatever specifications for this product that may exist are chiefly those prepared for marketing purposes and by state regulations, as relating to taxes and safety to prevent fires and explosions. The Western Petroleum Refiners Association, in session April 5 and 6, 1934, at Excelsior Springs, Mo., adopted a specification for tractor fuel, to be used as a standard for members of the association as follows:

W.P.R.A. TRACTOR FUEL SPECIFICATION

Flash		110° F.
Distillation ° F. per cent:	10	347
	25	392
	90	465
Color		16 or darker

These are minimum requirements, which means that the product cannot flash below 110° F. and the recoveries on distillation shall be at least the percentages stated.

Distillates, kerosene and gasoline are used as tractor fuels, and in many instances such fuels are raw or unfinished products. The kerosenes sold for use as illuminating oil are usually refined to a high degree of purity, whereas complete treatment is not required if the oil is to be used as a tractor fuel. However, the impure product does not sell so well on a low market as when the prices are high.

The lighter fractions of gas oil, kerosene and gasoline distillates may be used. As an example of state regulations that of South Dakota may be mentioned:

"The term 'distillate' shall be defined and construed to mean and include those products made from petroleum which are commonly known and designated by such names as distillate, tractor fuel, furnace oil, and which consist of refined, partly refined or unrefined distillation products of petroleum and which are similar in general boiling range to kerosene but which customarily have undergone less refinement than kerosene. The term 'distillate' as herein defined does not include kerosene, mineral seal oil, or other illuminating oils and the specifications set forth below shall not apply to such illuminating oils.

"All distillate, as above defined, under or by whatever name the same may be designated or sold in this State, shall conform to the following specifications, except as to sulphur content:

"1. Flashpoint.—The flashpoint of the product shall be higher than 110° F. when tested in the Tagliabue closed cup tester.

"2. Distillation.—When distilled according to the method of the American Society for Testing Materials prescribed for the distillation of gasoline, naphtha, kerosene and similar products, such method being designated as D-86, the product shall meet the following requirements:

"(a) The initial boiling point shall not be lower than 250° F.

"(b) When 10 per cent has been recovered in the receiver the temperature shall not be lower than 347° F.

"(c) When 90 per cent has been recovered in the receiver the temperature shall not be lower than 450° F.

"3. Color.—The color of the product shall be equal to number minus 16 Saybolt, or darker, when determined by the Saybolt chromometer.

"4. Sulphur.—No product sold under the name of 'distillate,' 'tractor fuel' or 'domestic fuel' shall contain more than fifteen-hundredths of 1 per cent of sulphur as determined by the method of the American Society for Testing Materials applicable to the product."

Previous High Temperatures May Cause Pourpoint Fluctuations

The A.S.T.M. suggests that samples for pour tests should stand at room temperature for 24 hours. This is impossible at this refinery for control work, so we have cooled the sample until it congealed and then heated to 115°F., as described by the A.S.T.M. Have you any suggestions to enable us to determine the pourpoint under such conditions?—J. J. B.

The pourpoint of an oil is in the main due to the formation of crystals of paraffin wax and the well-known laws relating to the formation of crystals are thought to be responsible for erratic pourpoints frequently obtained when testing some oils. That is, we know that very rapid evaporation causes the formation of small crystals, whereas slow evaporation will tend to produce large crystals; also the longer a solution stands the more complete the separation will be.

A hot oil when subjected to rapid reduction of temperature is not liable to come to a uniform structure, or composition, comparable with what may be expected on long standing or slow cooling.

It should be remembered that the A.S.T.M. methods are not primarily intended for control work but are expected to be reliable in cases of dispute; that is, they are referee methods. Most refinery laboratories make extensive use of A.S.T.M. methods but also use modifications or substitutions for some control tests.

When the pourpoint is an important specification it is not good practice to make shipments so close to production that it is not possible to observe the precautions which have been recognized as essential for adequate inspection. The A.S.T.M. test D97-33 makes a note under Special Procedure for Black Oils and Cylinder Stocks, A.S.T.M. Standards on Petroleum Products and Lubricants, September, 1933, page 53, as follows:

"(a) In those cases where it is known that a sample has been subjected to some temperature higher than 115° F. during the preceding 24 hours, or where the history of the sample in this respect is not known, the sample shall be held in the laboratory 24 hours before testing, unless three consecutive tests of the same sample in the same test jar give check results. For these particular oils, results obtained by one or the other of the alternative procedures shall be called the upper (maximum) pourpoint.

"(b) The lower (minimum) pourpoint shall be determined by heating a sample with stirring to 220° F. The oil shall then be poured in the test jar, cooled to 90° F. as before, and the pourpoint determined as described in Section 11.

"(c) The upper and lower pourpoints shall be reported separately."

Determining Preformed Gum in Lubricated Gasoline

How would you recommend separating the gum from a lubricated gasoline? I want to determine the preformed gum in a lubricated gasoline and am at a loss as to how to proceed.—J. B.

So far as I am informed, no method has been perfected which will permit an accurate determination of the preformed gum that may exist in a lubricated gasoline. An important factor is that various substances have been found in lubricated gasoline, including organic compounds, light and heavy lubricating oils, colored substances, and even graphite has been reported.

Some laboratories make the gum test according to the Bureau of Mines copper or glass dish method and note the character of the residue. If lubricating oil were present it would cause the residue to be oily. If small quantities of the very light lubricating oil had been added to the gasoline, the oil would probably pass off when reducing in the dish. Large quantities of a lubricated gasoline would have to be reduced, preferably by vacuum, to a small volume to enable one to detect the character of the lubricant.

Advantage may be taken of the fact that the gum is not soluble in precipitation naphtha. Determine the gum by the Bureau of Mines method, record the weight, then wash the residue with precipitation naphtha, letting the solution stand for about half an hour, then pour off the naphtha. Put the dish back on the oven to evaporate any naphtha. Then weigh again. Any difference will represent the lubricant and the remainder preformed gum.

Research Investigations in Oil Under Auspices of A.P.I.

Could you give me the list of the research investigations that are being made by the American Petroleum Institute?—R. I. T.

The National Research Council, Washington, D. C., has prepared a list of research scholarships and fellowships that are supported by the industries and associations. According to this list the research supported under the auspices of the American Petroleum Institute is:

American Petroleum Institute, 250 Park Avenue, New York, N. Y.

Fellowship at California Institute of Technology, for the study of the fundamentals of the retention of oil by sand.

Research Associates at Bureau of Standards. Projects: Separation, identification and determination of chemical constituents of commercial petroleum fractions; engineering principles in pipe line protection and tests of protective coatings; (with National Automobile Chamber of Commerce and Society of Automotive Engineers) alcohol-gasoline mixtures; aviation gasoline detonation.

U. S. Geological Survey, Washington, D. C., for study of the origin and environment of source sediments present in petroleum.

Extensive research is conducted directly by the Institute through the numerous committees that are organized under the several divisions of the organization. For a list of these see the article by W. R. Boyd, Jr., in The Oil and Gas Journal, May 31, 1934, page 33.

Oil and Other Fuels Required in Utility Generating Stations

We would appreciate the following information: The amount of oil per H.P./hr. that is used in industrial plants and central stations, or the amount of oil used per year by industrial plants and public utility generating stations.—W. W. R.

We do not have any data relating to horsepower produced by fuels, nor the quantity of oil used in industrial plants. The manufacture of gas in the United States required during the year 1932, the fuels and quantities as shown in the table:

FUEL FOR MAKING GAS—YEAR 1932

Fuel—	Tons or barrels
Bituminous coal	3,103,000
Anthracite coal	115,000
Coke	2,915,000
Oil	14,358,810

According to statistics published by the Division of Power Resources, U. S. Geological Survey, the fuels used in the generation of electric power from 1930 to 1933 are as follows:

Year—	Coal short tons	Oil (bbls.)	Natural gas M.C.F.
1930	42,898,067	9,260,051	120,289,978
1931	38,734,908	8,123,147	139,328,037
1932	30,289,556	7,966,578	107,875,054
1933*	30,581,585	9,887,988	102,600,649

*Preliminary.

The percentages of the fuels used in the production of electric power are also indicated for the same years, as follows:

Year—	Coal	Oil	Natural gas
1930	84.6	4.4	11.0
1931	83.8	4.1	12.1
1932	83.0	5.1	11.9
1933	82.7	6.1	11.2

For additional data on fuel used in power plants see National Survey of Fuel Oil Distribution 1929, by E. B. Swanson, U. S. Bureau of Mines.

PERSONAL PARAGRAPHS

JAMES ANDERSON, vice president of the Humble Oil & Refining Company, Houston, Tex., is visiting in the East on business.

* * *

C. H. BENKENSTEIN, Vinton Petroleum Company, Lake Charles, La., is spending the summer at his home at Big Lake.

* * *

J. R. BOAX is a new field engineer in Tulsa for the National Tube Company. He was formerly in the Pittsburgh, Pa., office.

* * *

L. V. STANFORD, vice president of the Sinclair Refining Company, in charge of export marketing department, is now in Europe.

* * *

HERBERT SKIDMORE, of the credit department of the Phillips Petroleum Company, Bartlesville, Okla., has been made assistant credit manager at Kansas City, Mo.

* * *

GEORGES VORBE, instructor in the geological department of the University of California, Berkeley, is spending several weeks in Midland and Fort Worth, Tex., on business. He was formerly in charge of the Midland offices of the Texas Pacific Coal & Oil Company.

* * *

HALL TAYLOR has been employed as geological scout for the Stanolind Oil & Gas Company, with headquarters at Tyler, Tex.

* * *

CLYDE BARRON, of the Atlantic Pipe Line Company, has been transferred from Grand Falls, Tex., to Hobbs, N. Mex.

* * *

CURTIS D. FOSS, California representative of the American Brakeblok Corporation, recently returned to Los Angeles from Detroit, Mich., where he spent a month at the head offices of his company.

* * *

HARRY BUTLER, of the Pure Oil Company, Tulsa, has been visiting Marietta and Gallipolis, Ohio, with GEN. CHARLES G. DAWES, who attended the Marietta College commencement.

* * *

W. P. HAND, educational engineer of the Southern California Gas Company, was married in Oakland, Calif., to MISS LILA CARLSON of that city, and will return to Los Angeles headquarters of the company following a honeymoon to Victoria and Vancouver, British Columbia.

* * *

GEORGE A. LEE, division superintendent, Humble Pipe Line Company, will move from McCamey to Cisco, Tex., and F. D. McMAHON from Cisco to Longview, Tex. The transfers are necessitated because of the ill health of J. C. HANRAHAN, division superintendent in East Texas, who will take leave of absence until his health is regained.

* * *

LEE GOWER, Sinclair Prairie Oil Company, Shawnee, Okla., is being transferred to Corpus Christi, Tex., as land man. The company is moving its Southwest Texas district office from Beeville to Corpus Christi. Others affected by the change are: GRADY KIRBY, geologist; CARL McADAMS, scout for the land department, and R. BRINKERHOFF, scout for the geological department.

GEORGE V. McLAUGHLIN has been made a trustee of the Consolidated Gas Company of New York.

* * *

WARREN A. SPINNEY, former scout and oil writer of Tulsa, with his family have moved to Los Angeles, Calif.

* * *

MISS MARIA SPENCER, palentologist of the Superior Oil Company of California, has been transferred from Golden, Colo., to Midland, Tex.

* * *

HENRY LANGSPECHT, chief scout of Shell Petroleum Corporation, and SHELDON HENRY, oil operator of Tulsa, are on a vacation in southeastern New Mexico.

* * *

H. C. PATTERSON, who has been in charge of the Nowata County, Oklahoma, production for the Pure Oil Company, has had his territory enlarged to include Osage County. He is moving his office from Nowata to Hominy, Okla.

* * *

JAMES S. NOLAND, in charge of the office of the Barnsdall Oil Company at Midland, Tex., has been elected president of the Midland Lions Club. He is also a director on the school board and a member of the chamber of commerce of that city.

MARRS McLEAN, independent operator, Beaumont, Tex., has returned from an extended European trip.

* * *

PAUL E. FITZGERALD, geologist for Dowell, Inc., of Midland, Mich., left last week for Shelby, Mont., where he will open an office in the Kevin-Sunburst district.

* * *

HENRY G. HUNT, executive secretary of the Oil and Gas Association of Michigan, and WALTER L. McCLANAHAN, independent producer, both of Mount Pleasant, Mich., returned last week from Washington, D. C.

* * *

T. F. PALMER, formerly in the land department of the Sinclair Prairie Oil Company at Tulsa, has been transferred to the Fort Worth, Tex., offices where he will be connected with the land and geological departments.

* * *

J. HARVEY WILSON, of Artesia, N. Mex., has been made district superintendent of the Pecos Valley Gas Company and the Gas Company of New Mexico. These companies supply gas to Tucumcari, Clovis, Portales, Lovington, Hobbs, and other towns in the Pecos Valley.

* * *

R. P. DOUGLAS, of the Socony Vacuum Corporation, arrived in Los Angeles Harbor a few days ago from Hawaii.

* * *

JACK T. GODSEY, of the Stanolind Oil & Gas Company, has been transferred from Hobbs, N. Mex., to Wink, Tex.

* * *

J. S. WATSON, of the Shell Oil Company with offices in Los Angeles, Calif., has been appointed assistant to JAMES MAINLAND in charge of all accounting in the southern division.

* * *

CHARLES S. JONES, president of the California Oil and Gas Association and executive officer of the Rio Grande Oil Company, was host to the Wildcat Committee of the association at his home in Flintridge last week.

* * *

HERBERT L. EGGLESTON, of the Gilmore Oil Company, and T. L. (TOM) TAGGERT, of the Standard Gasoline Company, have been elected president and vice president respectively of the California Natural Gasoline Association.

* * *

W. L. STEWART, JR., vice president of the Union Oil Company of California, finished first in the yacht race from San Pedro to the Santa Catalina Yacht Club after circling Catalina Island and accordingly took the Dick Schayer Trophy and the Hotel St. Catherine prize for the winning entrant. ARTHUR STEWART finished 55 minutes behind the winner.

* * *

A. M. (ALEC) CROWELL, gas engineer, is now with the Oil and Gas Division of the Texas Railroad Commission in charge of gas and refineries in the Texas Panhandle under J. M. McDONALD, deputy supervisor. Mr. Crowell is well known in natural gas and gasoline circles, having spent several years with the Empire Companies in the Mid-Continent and with General Petroleum Corporation on the West Coast.

DO YOU REMEMBER?

From The Oil and Gas Journal Files

25 Years Ago

June 21, 1909

The shallow Powell Field in Navarro County, Texas, was extended 2,500 feet by Inman, Smith & Kerr's test.

The model barge, Louisiana, loaded with enough 8-inch pipe to fill four ordinary freight trains.

Mr. and Mrs. Cliff Drew will erect an office building at Third Street and Boston Avenue, in Tulsa. Mr. Drew is the husband of Emma Perryman, an educated Creek Indian, who inherited a quarter section of land in the heart of the Glen Pool, which has so far paid her $150,000 in royalties and is still a large producer of oil.

20 Years Ago

June 25, 1914

A. E. Schein, of the Molot Drilling Co. of Baku, Russia, is studying American drilling methods. In Baku, Mr. Schein says, they start a well with a 42-inch hole, carrying it down until it freezes. This is followed by a 40-inch hole, and so on until the hole is completed. Stovepipe casing is used exclusively until the pay sand is reached. Then screwed pipe is run and the stovepipe casing removed.

Public meetings are being held on the question of a cessation of drilling in flush fields because of the overproduction caused by the Cushing Field in Oklahoma.

Calgary, Alberta's, gasoline well, known as the Dingman well, produces 64.5 gravity "motor fuel." Customers come to the well with steel drums and other containers and are served by Driller Brown.

The largest oil fields in Oklahoma and their present daily production are: Cushing, 147,000 bbls.; Glenn, Jenks and Wicey, 37,000 bbls.; Bird Creek and Flat Rock, 16,500 bbls.; Bartlesville district, 33,500 bbls.; Bald Hill and Morris, 22,350 bbls.; Osage, east half, 43,600 bbls.; Osage Junction and Boston Pool, 10,500 bbls.; total of the State, 347,000 bbls. Kansas is producing 11,500 bbls.

An Osage County, Oklahoma, town marshal killed all six of John Stink's dogs, and the famous Osage Indian character has gone into mourning. He wears nothing but a breech cloth and has covered himself with black mud and wanders disconsolately up and down Bird Creek.

10 Years Ago

June 19, 1924

Overproduction of crude oil in California and Oklahoma has raised the question of curtailment of drilling operations and shutting in of flush fields until supply is down to demand.

Robert Lee Peeler, who recently succeeded I. W. Fuqua as president of the California Petroleum Corp., started in the oil business as a tool dresser in California.

James A. Moffett, Jr., has been elected a vice president of the Standard Oil Co. (New Jersey) to fill the vacancy caused by the death of F. D. Asche. Mr. Moffett started in the oil business as a junior clerk for the Vacuum Oil Co. in the sales department in New York.

DAN M. GUY, vice president of the Ethyl Corporation, New York, has returned to his headquarters after a trip to Texas.

* * *

P. R. SMITH, chief scout for the Southwest producing division of the Pure Oil Company, Tulsa, was married to STELLA BAUMAN, of Fort Worth, Tex., on June 2.

* * *

D. T. ANDRUS, Bradford, Pa., oil producer, with his family, is making an automobile tour of Michigan and will visit other central states before returning home.

* * *

E. H. EDDLEMAN, secretary to the subcommittee on production of the Planning and Coordination Committee, Washington, D. C., is spending a few days in his former city, Fort Worth, Tex., attending to business in connection with code matters.

* * *

J. C. KENNEDY has been named superintendent of land and lease operations of the Empire Oil & Refining Company and Cities Service Gas Company, following the resignation of J. E. GRATTAN, who will enter other business. Mr. Kennedy has reported to J. M. NISBET, manager of the land and geological division.

* * *

GORDON GRIFFIN, formerly in charge of the petroleum engineering department of the Texas Railroad Commission at Kilgore, and more recently petroleum engineer for a Wichita Falls company, has accepted a position as chief petroleum engineer for the commission at Austin. He takes the place left vacant by resignation of W. F. KNODE.

* * *

H. THOMAS O'BRIEN, New York City, general manager of the Turkish-American Oil Company, spent several days in Houston, Tex., on business.

* * *

J. F. OWENS, president of the Oklahoma Gas & Electric Company, has been elected a director of the U. S. Chamber of Commerce.

* * *

CHARLES F. DOUGHERTY, of Dallas, Tex., district sales manager of the Larkin Packer Company, St. Louis, Mo., spent a few days in Tulsa last week on business.

* * *

N. R. CRAWFORD, Dowell Incorporated, Tulsa, has recently returned from a trip to the home office of the company at Midland, Mich., where he reported to the executives regarding new developments of his company in the Mid-Continent fields.

* * *

W. J. COLEMAN, CARL LINDH, and CARL A. JOHNSON have been named directors of the Consumers Gas Corporation, Bend, Ore., recently organized to succeed the Natural Gas Corporation of Oregon in that community. NORMAN COLEMAN, in charge of the Bend plant for several years, has been retained as manager.

* * *

F. GOOD, a director of Lubricating & Fuel Oils, Ltd., and of the S.A. Italiana Importazione Olii, and the European representative of the Gulf Oil Corporation, has been honored by being appointed a Commander of the Order of the Crown of Italy. Mr. Good was also the founder and president of the Italian Union Importatori Lubrificanti, and has for many years rendered valuable services to the Italian petroleum trade.

* * *

H. S. TIMS, who has been connected with the Canadian Western Natural Gas, Light, Heat & Power Company, of Calgary, since its inception, has resigned the position of comptroller of the Canadian Western and associated companies and will spend a holiday in California before resuming business in eastern Canada. After 10 years of banking experience Mr. Tims joined the Volcanic Oil & Gas Company at Chatham in 1910. He joined the Canadian Western company at Calgary when it was organized by EUGENE COSTE.

Didn't Cling to Bottom Round Long

Robert H. McElroy, Jr., general sales manager of the Pure Oil Company, whose name has become well known in the petroleum industry throughout the country, was born in Chicago, April 20, 1898. He received his early education in the schools of that city and he got his first oil job in 1916, when he was taken on as a clerk in the offices of the Western Petroleum Company in Chicago.

ROBERT H. McELROY, JR.

The young man is credited with having put into daily practice that old but highly esteemed one to the effect that what is worth doing is worth doing well. He soon relaxed his grip on the bottom round of the ladder and began climbing the higher ones. He was advanced from one position to another, remaining in each long enough to familiarize himself with its duties, until he became assistant manager of the organization.

Mr. McElroy, who had made a special study of work in the sales department, resigned from the Western Petroleum Company to accept the post of secretary and sales manager for the James B. Berry Sons Company of Illinois in the Chicago territory. In 1925 Mr. McElroy entered the service of the Pure Oil Company as general sales manager. He married Miss Mabel Ruth Van Ness. They have one daughter and reside in Evanson, Ill. Mr. McElroy is a member of the North Shore Golf Club, the Shawnee Country Club, and the Sky Line Club.

PROF. S. ZUBER, who has recently carried out further work at Devoli and other oil areas of Albania, has just returned to Rome.

* * *

W. L. JAMES, purchasing agent, Stanolind Oil & Gas Company, and president of Tulsa Association, left with other company officials on a business trip to Casper, Wyo.

* * *

W. H. O'CONNOR, general purchasing agent, Continental Oil Company, Ponca City, Okla., has returned to his desk after accompanying company officials on an inspection trip.

* * *

GEORGE D. LOCKE, of Chicago, vice president of the Barnsdall Oil Company, in charge of the marketing and distributing department, was in Tulsa this week for a few days. Together with other officials of the company he visited the Barnsdall refinery at Bartlesville, Okla.

* * *

N. C. McGOWEN, chief executive of the United Gas System, is offering to the company's district offices an award known as the N. C. McGowen Trophy for refrigeration achievement during April, May and June. The trophy must be won twice before it becomes the permanent possession of any district.

* * *

CHARLES B. JOHNSON, JR., petroleum engineer with Barnsdall Oil Company, Tulsa, has just returned from his honeymoon to Galveston, Tex. Mr. Johnson and MISS JULIETTE CHARITAT of Thibodoux, La., were married at the bride's home May 27. The newly married couple will make their home in Tulsa for a time.

* * *

J. OHNO, district manager, Tokyo Gas Company, Ltd., Tokyo, Japan; H. AKINE, Kyushu Gas Company, Ltd., Kokura, Japan; HISASHI MORI, gas engineer, Keihin Cokes Company, Ltd., Yokohama, Japan; SEISHI HADA, chief sales department for industrial appliances, Tokyo Gas Company, Ltd., Tokyo, Japan; and KIYOSHI ITO, manager supplying department, Tokyo Gas Company, Ltd., Tokyo, Japan, have returned home by way of California after a tour of the United States, including a visit to Kansas City, Mo. They were interested in gas distribution methods.

H. A. HEGELHEIMER, of Columbus, Ohio, treasurer of the Gordon Oil Company, and D. A. WEBBER, of Chittinango, N. Y., visited Central Michigan oil fields last week.

* * *

A. M. KAIME, president of the Cypress Petroleum Company, and MRS. MARY BURNS VAN WYCK, of Santa Barbara, Calif., have filed notice of intention to wed at Salinas, Calif.

* * *

W. M. O'CONNOR, vice president of the Atlantic Oil Producing Company, Philadelphia, Pa., has been in the Houston, Tex., office, of which W. C. COOLIDGE is district manager.

* * *

E. McADAMS, president of the North Kettleman Oil & Gas Company, has returned to Los Angeles, Calif., following a visit to Mexico City, Mexico, with MRS. McADAMS and his son.

* * *

RODNEY A. BOTHWELL, brother of D. C. BOTHWELL, of Tulsa, vice president of the Darby Petroleum Corporation, has been assigned to the scouting staff of that company and will have headquarters at San Angelo, Tex.

* * *

J. GARFIELD BUELL, of Muskogee, Okla., widely known oil producer and wildcatter, plans to reproduce the original town of Muskogee with replicas of the primitive buildings that made up the little Creek Indian settlement as it was before any railroad entered Indian Territory. The townsite was about 4 miles northwest of the present city of Muskogee, and Mr. Buell's fine home and grounds occupy a part of the site.

* * *

N. A. BEST, Dowell Incorporated, has been transferred from the Tulsa office to Midland, Mich., and left for his new duties this week.

* * *

J. O. DENTON, JR., has been transferred from the Wichita, Kans., district office to the sales department of Dowell Incorporated, at Tulsa office.

* * *

B. F. PICKARD has resigned as vice president of the Oklahoma Natural Gas Company, Tulsa, to succeed C. E. DOVE as general manager of the Central States Power & Light Corporation, Tulsa.

* * *

W. T. WALLACE, vice president of the Venezuela Gulf Oil Company and other South American subsidiary companies of the Gulf Oil Corporation, has returned to the New York City offices following an inspection trip of several weeks' duration.

* * *

HENRY NETHING, field superintendent of the Stanolind Oil & Gas Company in the McPherson area of Kansas, has been transferred to the Ellinwood area, a new district to take in the Ellinwood and Hilger Pools. HENRY WHITSTONE, superintendent at Eldorado, succeeds Mr. Nething at McPherson.

* * *

GORDON MICHLER, joint managing director of the Bedford Petroleum Company, S.A.F., and the chief representative of the Standard of New Jersey group in France, has been recalled to the United States to take up an important position. A farewell banquet was held recently in honor of Mr. Michler by the Association Universitaire de Paris.

* * *

DEAN W. FLOWERS, manager of the gas and electric departments of the San Antonio, Tex., Public Service Company, has been named vice president and general manager of the Muskegon, Mich., Gas Company and the American-Michigan Pipe Line Company. He will assume his new position July 1, it was announced by CHESTER N. CHUBB, elected president of the two Muskegon subsidiaries of the American Light & Traction Company. Mr. Flowers will succeed E. H. KIFER, of San Antonio, resigned, as general manager of the two Muskegon companies. L. J. HAMMER, acting manager since March 1, will return to his position as traveling auditor for the parent company.

NATURAL GAS DEVELOPMENTS

Hearing in Lone Star Suit Opened in Texas Court

AUSTIN, Tex., June 18.—The State moved to throw the burden of proof on the Lone Star Gas Co. in the suit to enforce a 20 per cent reduction in gas rates charged at approximately 250 cities and towns on the Lone Star system.

Elimination by the Railroad Commission of large sums from the Lone Star Gas Co.'s property valuation were cited as testimony in the company's case.

D. A. Hulcy of Dallas, assistant to the president of the company, said the commission's order cutting the company's rate for wholesale gas to more than 200 Texas cities had eliminated $687,781 for the value of gas wells and leaseholds in the Petrolia Field. Another sum Mr. Hulcy said the commission had failed to include in its valuation was $217,884 the commission deducted from the company's 1931 operating expenses. This sum was made up of $91,375 for management fees, $140,090 for canceled leases, and $13,581 for dry hole expense.

These sums account for part of the difference between the commission's valuation, which was about $46,000,000, and the company's valuation of about $70,000,000.

Mr. Hulcy also offered accounting statements showing that on the 32-cent rate which the commission decreed as fair the company would be earning only about 4 per cent, although the commission's order authorized 4 per cent.

Revenue for domestic gas sold by the company dropped approximately $1,000,000 between 1931 and 1933, Mr. Hulcy said, adding that the number of domestic consumers had decreased more than 7,000 between 1931 and 1933.

Eleven exhibits were submitted, after Judge Wheeler had overruled state objections, to show potential company returns if the Railroad Commission's order reducing the gas rate to 32 cents had been in effect four years up to the spring of 1934. One exhibit stated the company would have had only 3.97 per cent for returns in 1933 if the 32-cent rate had been in effect. This was based on the commission's own valuation, according to Mr. Hulcy, who said the rate reducing order allowed the company 6 per cent.

Existing contracts between the Lone Star Gas Co. and affiliated distributing companies were offered by Mr. Hulcy, believed to be a move to attack the order on the ground that it interferes with private contracts.

On direct examination Mr. Hulcy testified that the Lone Star Gas Co. owed the Lone Star Gas Corp. more than $17,000,000, on which the holding company received 6 per cent interest. For financial, purchasing and other services rendered, the corporation receives 1 per cent of the gross earnings of the pipe line company, he said.

Mr. Hulcy said the company had for disposition and return in 1933 almost $4,000,000, or 7.81 per cent on the actual cost of the property.

Judge Wheeler allowed E. A. Steinberger, chief valuation engineer of the Lone Star Gas Co., to offer in evidence a six-volume inventory of the companies of January 1, 1933. The jury was excused while state's attorneys argued that the Steinberger exhibits did not segregate Oklahoma from Texas property.

Judge Wheeler said the company exhibits had been prepared in accordance with the requirements of the Railroad Commission, which took cognizance of the Oklahoma property in the order reducing the company's gas rates. He also said attorneys for the State had not asked for such segregation in their petitions and that it was late to ask for it when the witness was on the stand.

Mr. Steinberger testified the Lone Star physical property inventoried $60,000,000 January 1, 1933, and that nonphysical values were more than $13,000,000, bringing the total valuation to $73,000,000.

Mr. Hulcy, recalled, said 99 per cent of the company's common stock was owned by the holding company, the Lone Star Gas Corp., and that 1931 taxes paid, exclusive of Federal income, were almost $400,000. He said state regulation had cost the company $168,000 in 1931.

New Gas Field Opened in Potter County, Pennsylvania

COUDERSPORT, Pa., June 16.—A new gas field in Potter County is believed to have been opened this week with the completion of an 18,000,000-foot producer on a separate dome which offers great possibilities for exploration. The acreage in the new field is controlled by the Lycoming Natural Gas Co., United Natural Gas Co., Cities Service, and the Potter Development Co. The Oriskany was reached at 4,754 feet.

This discovery proves the Harrison anticline although the drill is only 4 feet in the sand. In other sections of Potter County 51 wells are being drilled or just completed. Of 35 wells finished, 20 are producers ranging from 3,000,000 to 60,000,000 feet daily.

The Zerbe well at Open Brook, between Smethport and Allegany, is down 4,600 feet and is still drilling through black shale. It is expected that the Oriskany will be reached at around 4,800 feet. If this test is successful a second new field will be opened up.

Company Made Only $95 on Its $50,000 Plant

DALLAS, Tex., June 18.—Two years ago the city council of Royse City and the Community Natural Gas Co. got into a dispute over the rate for gas. Suit was filed in December, 1932, by the gas company which sought to enjoin the city from fixing a rate lower than the company contends is necessary to prevent confiscation of its property. During the intervening 18 months the envelope in the court clerk's office has waxed fat with the various plaintiff's petitions, defendant's amended answer, the plaintiff's second amended petition and the defendant's second amended answer. Attorney General James V. Allred, Railroad Commissioners Lon A. Smith, C. V. Terrell and Ernest O. Thompson have all been made parties to it. The court has had little to do except, on petition of one party or another, to order a continuance.

Finally last week the suit for injunction went to trial on its merits. The company testified that it earned only $95 for return on investment and depreciation during 1933. J. C. Carter, Jr., of the accounting department was the first witness heard by Judge W. H. Atwell in the equity proceedings. He made this statement to substantiate the claim of the company that present rates are confiscatory.

P. McDonald Biddison, consulting engineer, the second witness for the company, testified that the present value of the company in Royse City is $49,539. Valuation engineers for the city assert the property is worth only $31,000.

Mr. Biddison testified that natural gas distributing companies must earn 10 per cent in normal times to attract enough capital to meet normal development.

Mandamus Writ Issued in Kansas Gas Rate Case

TOPEKA, Kans., June 18.—The Kansas Supreme Court has issued a writ of mandamus directing the distributing subsidiaries of Cities Service to appear before the State Corporation Commission for hearings to determine a reasonable gas rate to the consumers.

The writ is directed against these distributing companies: Capital Gas & Electric Co., Topeka; Wichita Gas Co.; Hutchinson Gas Co.; Newton Gas Co.; Pittsburg Gas Co.; Wyandotte County Gas Co.; Arkansas Valley Gas Co.; Girard Gas Co.; Union Public Service Co.; and Western Distributing Co.

The writ was asked for by the corporation commission following the effort of the companies to seek an injunction in the Shawnee County District Court.

The old public service commission had fixed the rate at 30 cents per 1,000 feet. This rate was enjoined by Judge George T. McDermott and Judge L. Phillips of the U. S. Circuit Court of Appeals. An appeal was taken to the Supreme Court of the United States, which sent the case back to Kansas on the ground that since no rate had been fixed for the consumers, the litigation should not be in the courts until this rate was determined.

When the mandate of the Supreme Court was spread on the court records the corporation commission announced February 23 an informal hearing before it for all the companies. At this hearing the commission proposed to set the date when it would begin the series of investigations into the affairs of each of the companies, preparatory to fixing what rate each company would be authorized to charge consumers.

It was when this informal and preparatory hearing was announced that the companies went into the district court and sought an injunction to prevent the commission holding any hearings.

The commission, in order to speed the case, took a short cut into the State Supreme Court, and asked for the writ of mandamus. There would have been a long hearing in the district court, and then months consumed in perfecting an appeal to the supreme court. Ordinarily there would not have been an adjudication of the legal points until next fall.

Following the filing of an application by the commission for an immediate order, the Kansas Supreme Court ordered the companies to show cause by June 20 why the writ of mandamus should not be issued at once.

Commission and Court Consider Saginaw Rates

MUSKEGON, Mich., June 18.—Michigan Public Utilities Commission has taken under advisement the testimony of 11 witnesses against Saginaw, Mich., natural gas rates. The Consumers Power Co., Saginaw distributors, will present its case at Lansing in July.

The Saginaw city council recently revoked a contract with the Consumers company to have been in force two and one-half years after June 27, 1933. Under the contract the company was empowered to charge an average of $1.80 per 1,000 feet compared with a previous rate of $1.25 for artificial gas, basing the increase on the higher B.t.u. content of the natural fuel.

U. S. Judge Arthur J. Tuttle refused to grant three Saginaw taxpayers an injunction restraining the Consumers Power Co. from collecting the rates for natural gas provided in the contract revoked by the city council. He also refused the company's request for dismissal of the suit which attacked the legality of the contract, indicating it probably will be tried in U. S. District Court at Bay City in July or August.

Texas Commission Rules on Small Town Increases

AUSTIN, Tex., June 18.—The State Railroad Commission has adopted an order forbidding all gas companies from raising their rates in any Texas town of 2,000 population or less, without first applying for the increase and showing it to be fair and reasonable.

The order is effective immediately.

"Any gas company attempting to disregard this regulation will be called to a strict accounting for such action," declared Commission Chairman Lon A. Smith.

The order which is temporary, said: "In the opinion of the Railroad Commission the situation now existing presents an emergency which necessitates a temporary rule."

"We have recently had numerous complaints and appeals for help from cities and towns of 2,000 population and less with reference to attempted increases in gas rates," said Chairman Smith. "The commission will leave nothing undone to see that only such rates as are fair and equitable to all parties concerned shall be promulgated in such towns."

In effect, the order clarifies rate making procedure. In the city of Farmersville gas case, the court refused the commission an injunction against enforcement of higher rates, ruling that the commission had issued no order requiring a hearing before rate increases were enforced. Texas statutes gave the commission jurisdiction over gas rate disputes, but no order had been issued clarifying procedure.

The Farmersville case is now pending on a motion for rehearing before the State Supreme Court. The order probably will be revised after final disposal of the Farmersville case.

Two Kansas Gas Companies File Lower Rate Schedules

TOPEKA, Kans., June 18.—Two gas companies have filed new reduced schedules for gas rates with the Kansas Corporation Commission.

The Marion Gas & Service Co. and Herington Gas & Service Co., subsidiaries of the General Utilities Co., now in the hands of a trustee, filed the new gas rate schedules making material reductions in the gas rates to be charged consumers in the two cities.

The present rate is 75 cents per 1,000 feet for the first 4,000 feet, 50 cents per 1,000 for the next 36,000 feet, and 40 cents per 1,000 for the excess. The new rate is $1 for the first 1,000 feet, 50 cents for the next 19,000 feet and 40 cents for the next 80,000 feet. This reduces the rate for the first 5,000 feet from $3.50 to $3.

NEW O.N.G. FRANCHISES

Franchises to sell gas in Broken Arrow, Coweta and Porter, Okla., for the next 25 years have been granted to the Oklahoma Natural Gas Corp.

"This means an added income for these three communities that they have not had before," Jennings Young, vice president of the Oklahoma Natural corporation, said. "The new franchises stipulate that the company is to pay to each town 2 per cent of the gross receipts in return for the use of the streets and alleys."

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing and transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depth of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

Information Needed in This Case Obtainable With Instrument

I have a situation here in which I should like to have some help. My wells produce both oil and gas at about 1,000 feet from a sand that is about 50 feet thick. This sand lies in two distinct layers, each roughly 25 feet thick and 25 to 35 feet apart. Most of the oil comes from the upper layer and most of the gas from the lower. I maintain a fluid level of about 600 feet and a well-head rock pressure of 75 to 150 pounds. What I want to find out is what the fluid level should be in relation to the rock pressure to keep the oil from the upper stratum from being absorbed by the gas stratum.—N. E. N.

To get the information you desire it is suggested that you obtain a subsurface pressure instrument or employ a company making a specialty of getting this type of data.

By the proper use of subsurface pressure bombs or instruments it is possible to determine the pressure at any point beneath the surface. If this information is at hand it is not difficult to get the rest of the information you desire and work out methods of repairing your well.

In a paper presented before the Tulsa meeting of the A.I.M.E. in October, 1930, C. V. Millikan and Carroll V. Sidwell of the Amerada Petroleum Corp. stated that they had found the following difference in subsurface pressures in a well drilled in the Carr City Pool in the Greater Seminole district of Oklahoma:

Hunton, from 3,989 feet to 3,910 feet, 1,520 pounds pressure; Simpson, from 4,068 feet to 4,124 feet, 1,152 pounds pressure; first Wilcox, from 4,124 feet to 4,142 feet, 637 pounds pressure; second Wilcox, from 4,217 feet, 800 pounds pressure.

The Simpson and first Wilcox open to the hole and the pressure in the second Wilcox was estimated from increase in fluid level.

It will be noted that the upper formation had the highest pressure. The instrument recorded it accurately and after the facts were known drilling methods were corrected to prevent loss of mud into the Simpson when drilling in or passage of oil from the Hunton to Simpson or lower formations when the well was put on production. It is an example of the kind of information that can be obtained with a properly designed and operated pressure instrument.

Determining the Correct Balance of Load at a Central Power

I will appreciate it if you will inform me how the correct balance of load at a central power is arrived at. This question seems to be harder than it looks.—U. F. T.

You have gone far toward answering your own question when you say it "seems to be harder than it looks." It is all of that and this department is unable to refer you to any simple formula that can be applied to this problem that will be safe and reliable.

It is suggested that you take the matter up with the manufacturers of central powers. They maintain engineering staffs equipped to take such matters under advisement and make definite reports. As conditions vary and the type of equipment used may be of different design the problem becomes more and more complicated if any attempt is made to try to answer it with generalities.

Consult a designing mechanical engineer or some manufacturer and give all the facts as you know them and in this way you can get reliable advice. Even though you pay for the report it will probably be cheaper in the long run if the report is made by experienced engineers than to go ahead trying to install central power units without proper advice and then having to adjust the wells by cut and try methods. Every change will cost money and delay. Delay will mean loss in production and loss in production can be expressed in money. If that loss is avoided the consulting fee will in reality cost you nothing. And you will have the oil and be saved the worry.

Inhibitors Keep Well Casing and Tubing From Damage by Acid

I have read several short articles about the production of oil wells being increased by introducing acid into the well. The question has arisen in my mind how an acid strong enough to eat away limestone can be prevented from damaging casing and tubing and any other equipment in the well. I would like to know what measures, if any, are taken to meet what looks to me like a serious problem.—S. T. L.

In the early experiments with acid treatment of wells the damage to casing and tubing did present so serious a problem that many operators refused to employ this method of increasing production. Research and experiment have gone far toward eliminating the problem by developing inhibitors for use in conjunction with the acid. The following information regarding these inhibitors is provided by M. E. Chapman, production engineer of the Gypsy Oil Co.:

"When acid treatment was first attempted, little was known about the use of inhibitors which prevent the attack of acid on metals. The commercial use of inhibitors for protection of metals in acid solutions is a long established practice in metal industries. Investigations carried on along this line have resulted in the development and use of inhibitors which have largely eliminated the acid damage to casing or other equipment.

"The steel industry developed many inhibitors for use in pickling iron and steel. Before these materials can be galvanized mill scale must be removed. Various inhibitors were developed which permitted acid to dissolve mill scale without affecting the iron and steel.

"A number of inhibiting substances have been studied. There is no definite relation between chemical properties and inhibitory value. Some inhibitors are colloidal and tests show that their inhibitive value is increased proportionately to the colloid concentration. Some substances exert inhibitory action when only very small amounts are present, suggesting that the effect is catalytic in nature.

"The mechanism of inhibitive action is little understood. Several explanations have been advanced for the action of inhibitors. One theory is that the inhibitor forms some sort of film over the cathode which prevents the ready evolution of hydrogen. Another theory is that iron immersed in acid goes into solution at the anode areas, forming iron ions in solution and depositing an equivalent amount of hydrogen ions at the cathodic areas. These cathodic areas are assumed to occur principally in the grain boundaries of the crystals in steel, or at the interface of slag and iron in wrought irons. Most inhibitors are either organic bases or positively charged colloids and when these are present they travel to the cathode areas with the hydrogen. When the positively charged particles of the inhibitor are discharged at the cathode, they cannot escape by gaseous evolution, and accordingly are adsorbed on the surface, building up a protective layer."

Producers Should Count the Cost Before Deciding on Drilling

I hold an oil lease on some property here and the owner of the land thinks I should do more drilling. I have put down one well and it is just about going to pay out, the best I can figure it, but I don't believe there would be any profit, for me at least, in drilling another well. Much the same question must come up in the big companies, and I am wondering if they are guided by any fixed rules in deciding what to do. If they are, their rules might be of help to me and they might help me in discussing the thing with the landowner. I will be glad to get any information along this line.—N. E. L.

Large producing companies are guided by certain considerations, which might be called rules, in deciding upon the wisdom of drilling additional wells on a lease. Failure to appraise conditions carefully in this connection may lead to serious financial losses, especially if the gas pressure is near exhaustion with the attendant decrease of probable future yield. The uselessness of drilling a well which gives no promise of a fair return on money expended should be apparent to the owner of the land as well as to the man who holds the lease.

Well managed companies require that a proposition to drill a well be accompanied by an estimate of the cost, including overhead. It must be accompanied too by an estimate from the engineering department relative to the depth and sand penetration, along with facts concerning the production records of any near-by wells and expectancy of the new well's probable initial production.

If decline curves of the field are obtainable, these should be studied. The probable yearly gross income from the well then is computed, and from this must be taken royalty payments and costs of production with the proper proportion of overhead expenses and taxes. With these in hand it is possible to compare their total with the estimated cost of drilling the well and getting it on production, to which should be added the cost of the lease. If the figures show the expense of completing the well generally covered, it may be regarded as reasonably safe to go ahead with the project.

Some companies impose as a condition of drilling a new well that it must return the costs involved within a certain time, such as three, four or five years, and they regard the net profits after the expiration of this period as the only safety factor.

This method of procedure may be expected to reduce the number of unprofitable wells to a minimum, although various things may happen in the course of drilling to bring the cost far above the average, and calculations concerning initial and ultimate production may prove far wrong even when made with the utmost care and engineering skill.

Why Was It Called That?

GALL

In one of its commonest uses the word "gall" refers to a sore or wound on the skin produced by rubbing, especially one on the back of a horse made by the saddle or harness. Seafaring men found need of a term to apply to damage inflicted on masts and cables by attrition and they adopted this one. The oil field has borrowed many terms from the sea and it is quite likely that this is among them, for now an injury to a thread on oil-country pipe and other threaded devices is referred to as a gall. By extension the word is applied to bruises on other materials.

MARKET RECORD OF OIL SECURITIES

Active Oil Stocks Listed on New York Stock Exchange

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1934 High	1934 Low	Week ended June 16 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	1933 High	1933 Low	1932 High	1932 Low	1931 High	1931 Low
55⅝	41½	4,500	54½	53	54⅝	Amerada Corp.	767,375	N.P.	50cQ	1-31-34	47⅝	18½	22¾	12	23	11¼
35¼	21¾	10,300	27⅞	26	27½	Atlantic Refining	2,665,234	$25	25cQ	6-15-34	32½	12⅜	21⅞	8⅝	23⅝	8⅝
10	7	5,600	8¼	7⅝	8	Barnsdall Corp.	2,248,795	$5	....	5-11-31	11	3	7	3⅜	14½	4
19¼	11⅛	49,200	15	13¼	15	Columbia Gas & Elec.	11,610,036	N.P.	12½cQ†	5-15-34	28⅛	9	21	4¼	45⅝	11⅝
14¼	9½	31,400	11¾	10¾	11¼	Consolidated Oil Corp.	14,218,835	N.P.	28c	4- 7-34	15¾	5	9	4	15⅞	4⅛
22¾	16½	39,400	22⅛	19¾	20½	Continental Oil of Delaware	4,738,593	$5	25c	4-30-34	19⅝	4⅞	9⅜	3⅝	12	5
22¼	15⅛	16,900	20⅝	18⅝	20⅜	General Asphalt	387,149	$10	....	6-15-32	27	4⅝	15½	4¾	47	9⅝
5⅜	3¼	2,100	4¼	3⅞	3⅞	Houston Oil (new)	1,098,618	$25	....	10-17-30	7⅜	1⅞	5⅜	1⅛	14⅛	3
3⅜	1⅜	800	2¼	1⅞	2	Louisiana Oil Refining	1,302,158	N.P.	....	.....	4	⅝	2¼	½	4½	1
14¾	11	8,500	14⅛	13⅜	13⅝	Mid-Continent Petroleum	1,857,912	N.P.	25c	5-15-34	16	3¾	8⅞	3¾	16¾	5
20¾	11½	1,000	18¼	17½	17½	National Supply of Delaware	382,591	$25	....	5-15-31	28⅝	4	13	3½	10¼	5
15⅞	10½	9,100	12⅜	12¼	12⅝	Ohio Oil Co.	6,563,107	N.P.	15c	6-15-34	17⅝	4¾	11	5	19½	5⅛
8⅝	6½	1,000	7⅞	7⅛	7⅞	Pacific Western Oil	1,000,000	N.P.	25c‡	10-25-33	9½	3	8	3	15	2⅞
2½	1¼	600	1½	1¼	1¼	Panhandle P. & R.	198,770	N.P.	....	.....	4¼	⅜	1¼	¼	4¼	⅝
20¾	15⅛	22,100	20	18½	19⅛	Phillips Petroleum	4,154,687	N.P.	25c	5-14-34	18¾	4¾	8⅛	2	16⅝	4
16¾	10	3,600	13	12¼	12½	Plymouth Oil Co.	990,261	$5	25cQ	3-31-34	17⅝	6¾	12½	6	18	6
14⅞	9⅜	16,300	11⅞	10½	11⅜	Pure Oil	3,038,370	N.P.	....	9- 1-30	15⅜	2½	6½	2⅞	11⅞	3¼
39⅛	33	1,700	35⅞	35½	35½	Royal Dutch N. Y. shares	432,224	$14	$1.07½	8-14-33	39¾	17⅝	23¾	12⅛	42⅝	13
38⅝	25⅜	4,600	35½	32½	35½	Seaboard Oil of Delaware	1,204,460	N.P.	15cQ§	6-15-34	43⅜	15	20⅜	6⅝	20¾	5½
11⅞	7⅝	13,700	8⅞	8¼	8⅞	Shell Union Oil	13,070,625	N.P.	....	6-30-30	11⅝	4	8¾	2½	10¼	2½
89	58	700	74	73½	74	Shell Union Oil pfd.	400,000	$100	....	7- 1-31	61	28½	65¼	18	78	15
11¼	8¼	3,500	10½	10⅛	10½	Simms Petroleum	461,000	$10	25c	1-17-34	12⅜	4⅞	7½	3¼	11	3½
11½	7⅞	500	10¼	9¾	9¾	Skelly Oil	1,008,514	$25	....	12-15-30	9⅞	3	5¾	2½	12⅞	2
19⅞	14	54,600	17⅛	16	16⅞	Socony-Vacuum	30,905,006	$25	15cQ	6-15-34	17	6	12¼	5¼	21	8⅜
42⅞	30⅝	24,200	37½	35⅛	37	Standard Oil of California	13,102,900	N.P.	25c	6-15-34	45	19½	31⅞	15⅛	51¾	23⅛
41	33⅞	200	37⅜	37⅝	37⅝	Standard Oil of Kansas	200,000	$10	50cQ	7-31-34	39⅞	12¾	16½	7	19	7¾
50⅛	41⅛	45,200	47⅝	45¾	47⅝	Standard Oil of New Jersey	25,740,965	$25	50cSA	6-15-34	47½	22¾	37⅜	19⅞	52½	26
63½	51½	2,500	63½	61½	62¼	Sun Oil	1,733,013	N.P.	25cQ	6-15-34	59	35	39⅞	24⅜	45¼	26¾
29⅜	21½	16,900	26	24¾	25⅛	Texas Corp.	9,352,371	$25	25cQ	7- 1-34	30½	10⅜	18¼	9¼	36¼	9⅞
6½	3⅛	1,500	4¼	4	4	Texas Pacific Coal & Oil	880,703	$10	....	12-31-29	6½	1⅜	4	1½	6½	1⅞
14¼	8½	23,200	13⅞	13	13¼	Tide Water Associated	5,618,672	N.P.	....	2-16-31	11¾	3⅛	5⅝	2	9	2⅛
84¾	64½	300	81⅛	81	81	Tide Water Associated pfd.	666,524	$100	$1.50Q	4- 1-34	65¼	23½	60	20	68	20½
20½	15	5,200	17⅜	16½	17⅛	Union Oil of California	4,386,070	$25	25cQ	5-10-34	23⅜	8½	15⅜	8	26⅝	11
21	15¾	3,100	21	20	21	Union Tank Car	1,200,000	N.P.	30cQ	6- 1-34	22¾	10½	19¼	11¾	25¼	16
5¾	3½	800	4¼	3⅞	4⅛	Wilcox Oil & Gas	424,839	$5	....	5-10-28	5½	2	8¾	2¾	9⅜	2¾

*Ex-dividend. †Payable in 5 per cent convertible preferred stock. ‡Initial dividend. §Plus extras.

Active Oil Stocks Listed on New York Curb

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1934 High	1934 Low	Week ended June 16 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	1933 High	1933 Low	1932 High	1932 Low	1931 High	1931 Low
38	31¾	No sales	..	..	..	Buckeye Pipe Line Co.	200,000	$50	75cQ	6-15-34	39¾	25	35	17½	56	30
5½	2⅝	7,800	4	3⅜	4	Carib Syndicate	579,000	25c	....	.....	7¾	¼	¾	¼	2⅜	¼
126½	116	50	121½	121½	121½	Chesebrough Mfg. Co.	120,000	$25	$1Q†	6-29-34	129	71	90	53	129½	75
4¼	1⅜	23,700	2½	2¼	2½	Cities Service	37,804,394	N.P.	....	6- 1-32	6¼	1½	6⅞	1¼	20¾	5
3¼	1¼	1,100	2⅜	2⅛	2⅛	Colon Oil	2,200,000	N.P.	....	.....	4	¼	1¼	¼	3⅛	¼
3⅞	1⅝	300	2¾	2½	2½	Cosden Oil	399,687	$1	....	.....	3⅞	1⅜	2⅞	¼	3¾	⅜
13⅜	9⅝	14,400	13⅛	12⅝	13⅛	Creole Petroleum	6,974,356	$5	....	.....	12	4¾	3⅛	1⅜	3⅞	1⅝
7½	4¾	500	7	7	7	Darby Petroleum	509,696	$5	25c	2-15-34	8	2⅛	7⅛	1⅝	2½	1⅝
2¼	1⅝	No sales	..	..	..	Derby Oil & Refining	263,162	N.P.	....	.....	2¾	⅞	3	1	6	1½
36	31	50	34	34	34	Eureka Pipe Line	50,000	$100	$1Q	5- 1-34	41¾	20	35	18	36	19
76¾	56½	9,000	69½	65⅝	68¼	Gulf Oil Corp.	4,538,101	$25	....	10- 1-31	62	24	44¾	23	75½	25⅜
46⅜	33½	12,700	45¾	44½	45⅜	Humble Oil & Refining (new)	8,923,935	N.P.	25cQ	7- 1-34	105½	40	55	35⅝	72	44½
15⅜	12⅝	16,600	15⅜	14⅞	15⅜	Imperial Oil of Canada	26,857,152	N.P.	25cSA†‡	6- 1-34	15⅞	6½	10⅞	6¼	18¼	7⅜
6⅞	3⅞	100	4⅜	4⅜	4⅜	Indiana Pipe Line	300,000	$10	15cSA	5-15-34	8	3⅛	7½	2¾	21⅜	5½
30⅜	19⅜	29,700	30⅜	28¼	30	International Petroleum	14,247,088	N.P.	56cSA†‡	6- 1-34	23½	8⅞	12¼	8	15½	7⅜
3¾	2⅛	9,700	4	3½	3⅞	Louisiana Land & Exp.	3,000,000	N.P.	....	.....	2¼	⅜	2½	½	2	½
5⅞	4	No sales	..	..	..	Lion Oil Refining	270,000	N.P.	....	10-27-30	9½	1¼	3½	⅞	6¾	1½
8¾	4¾	2,800	5¾	5¼	5⅝	Lone Star Gas	5,382,723	N.P.	16cQ§	3-31-34	11⅞	4¾	11	3⅜	29	5½
5½	4	2,400	5½	5⅛	5½	Mountain Producers	1,682,182	$10	15cQ	7- 2-34	6½	2½	4¾	2⅛	5⅞	2
18⅛	14	1,900	16⅞	15⅞	16½	National Fuel Gas	3,810,183	N.P.	25cQ	4-16-34	20	10	14⅝	8	26½	9¾
9½	7⅝	No sales	..	..	..	National Transit	509,000	$12.50	40cSA	6-15-34	10	5½	10½	6	17½	5
2¼	1¾	5,500	2⅜	2¼	2⅜	New Bradford Oil	1,445,202	$5	10c	3-15-34	2⅛	½	⅞	¼	1½	½
2¾	1	100	1⅜	1⅜	1⅜	New Mexico and Arizona	1,000,000	$1	....	.....	1⅞	½	1¼	⅜	3	⅜
4¾	3	No sales	..	..	..	New York Transit	100,000	$5	15cSA	4-14-34	4⅞	3	9¾	7½	14½	5⅞
7	4⅝	100	5⅝	5⅝	5⅝	Northern Pipe Line	120,000	$10	25cSA	1- 2-34	6⅛	4¼	5½	3⅛	35½	20
2⅝	⅞	7,200	2	1¾	1⅞	Pantepec Oil	1,608,700	N.P.	....	.....	3¾	⅛	⅝	1/16	2	⅝
3⅛	1¼	600	1¾	1⅝	1¾	Ryan Consolidated	296,931	N.P.	....	.....	4¼	⅝	2⅛	⅝	3	¾
7⅞	5¾	1,600	7	6⅝	7	Salt Creek Producers	1,496,859	$10	20cQ	5- 1-34	9¼	3½	5½	2⅞	7⅝	2¾
26½	17½	1,200	26⅜	25¼	25½	South Penn Oil	1,200,000	$25	30cQ	6-30-34	22⅛	11	16½	9⅝	23⅞	9¼
5¼	4	100	5	5	5	Southern Pipe Line	100,000	$10	10cSA	3- 1-34	6	2¼	10	3¾	17	7
47	41	No sales	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	$1Q	7- 2-34	43	24½	37	27	42½	25
32¾	25	18,400	27⅜	26⅞	27⅜	Standard Oil of Indiana	15,528,504	$25	25cQ	3-15-34	34	17	25⅛	13⅛	38½	13½
17⅝	14⅝	4,400	16½	15¾	16½	Standard Oil of Kentucky	2,606,983	$10	25cQ	6-15-34	19¼	8⅜	15⅞	8⅞	23⅝	12⅛
16⅜	12⅞	300	13½	13⅛	13⅜	Standard Oil of Nebraska	190,822	$25	25cQ	6-20-34	20½	11	19	10¼	36½	16
27½	18¼	600	20	19⅝	19¾	Standard Oil of Ohio	753,740	$25	....	1- 3-33	41	15½	30⅛	15½	62½	23
2	1/16	1,400	1⅜	1¼	1¼	Sunray Oil	1,162,840	$5	....	4-15-31	1½	¼	⅝	⅛	5¼	¼
11	4⅝	2,300	7½	6⅛	7½	Texon Oil & Land	936,028	N.P.	15cQ	6-30-34	13¾	6¼	10½	4½	12⅞	2½

*Ex-dividend. †Plus extras. ‡Payable in Canadian funds. §Payable in preferred stock.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

Eastern Fields

(Continued from Page 65)

3,513 on the J. C. Clouster farm in Liberty district. In Monongalia County, Harry L. Tennant is drilling at 2,100 feet in No. 5 on the Wise and Tennant lease in Battelle district.

In Putnam County, Midway Cities Gas Co. has reached 1,800 feet on the Switzer heirs farm in Scott district and in this district, J. V. Reishman is down 330 feet on the James Webb farm.

In Ritchie County, on Dutchman Run in Murphy district, Hardman and Starcher and others are spudding on the Roy Livingstone farm. Ira Roberts and others have reached 1,800 feet on the W. T. Baker farm. Everett Starcher and others are drilling at 1,400 feet on the Daniel Wilson farm. In Grant district, Horner & Hank have started drilling on the J. H. Alkire farm. Smith and Henderson are down 800 feet in a second test on the Thomas Maloy farm. Petroleum Products Co. has reached 1,226 feet on the Jennie Carroll farm, a test.

In Roane County, on Buffalo Creek in Curtis district, Henderson Oil Co. is ready to start drilling on the S. W. Ball farm, 300 feet east of the F. H. Bee, Jr., No. 2. In Spencer district, O. G. Epling and others have rigged up on the L. P. Starr farm on Little Creek, 800 feet west of the test on the Stella V. Knotts farm. J. D. Scott and others are shut down for water at 675 feet on the John B. Lukens farm. In Geary district, Frank Finley and others are drilling at 1,500 feet in a second test on the W. Hunt Smith farm.

In Wayne County, J. H. Wilson has reached 2,783 feet on the Hamilton Land Co. tract in Ceredo district. C. L. Dixon is shut down testing at 2,150 feet No. 1 on the Charles Jones farm in Stonewall district.

SOUTHWEST PENNSYLVANIA

There were two small producers completed in Southwest Pennsylvania and one gas well. In Greene Township, Greene County, J. L. Garard & Co. completed No. 5 on the John Sicklesmith farm in the Dunkard sand and it will make a 1-bbl. pumper. In South Franklin Township, Washington County, E. H. and J. B. Tague completed No. 10 on the Adaline D. McKennan estate in the Dunkard sand at 982 feet for 4 bbls. a day.

In Greene County, South Penn Oil Co. drilled No. 2 on the J. C. Barrackman farm deeper to the Big Injun sand and has a gas well gauging at 330,000 feet a day. The top of the Big Injun was at 1,967 feet with gas showing at 2,068 feet and 2,077 feet. The total depth was 2,186 feet.

In Allegheny County, O. Miller is drilling on the J. W. McCready farm in McCandless Township, at 1,300 feet. The same operator has a rig on the Rogers farm in this township. In Findlay Township, E. L. Oles is down 1,850 feet in a second test on the O. R. Degelman farm.

In Greene Township, Greene County, Carnegie Natural Gas Co. has started to drill deeper No. 1 on the T. Patterson farm. In Center Township, J. B. Orndoff reached 600 feet on the W. H. Scott farm and shut down for water.

In Amwell Township, Washington County, Carnegie Natural Gas Co. is drilling at 830 feet on the N. B. Redd farm. Same company is hauling rigs on A. M. Cole and C. W. Farabee farms. Philadelphia Oil Co. found no gas in its second test on the Hulda Jenkins farm. The Gantz sand was at 2,707-35 feet and it is now drilling at 2,753 feet. Union Gasoline & Oil Co. has reached 2,258 feet in No. 2 on the Mary B. Lindley farm. Raymond Orrill & Co. have reached 2,308 feet in No. 4 on the G. L. Walker farm.

In East Findley Township, the second test of Myers, Hoskinson and others is drilling on top of the Gordon stray sand on the narrow J. N. Clutter strip. No. 1 is now making about 100 bbls. a day. Union Gasoline & Oil Co. is drilling No. 3 at 1,965 feet in offsetting No. 1 on the large J. N. Clutter farm. The Big Injun sand was reached at 1,701 feet with about 167,000 feet of gas a day showing at 1,709 feet. No. 4 offsetting Myers Hoskinson's No. 2 is drilling at 2,050 feet. The Big Injun was struck at 1,703 feet and extended to 1,988 feet. The Injun sand gas was found at 1,720 feet and gauged 275,000 feet.

In the same township, Natural Gas Co. of West Virginia is drilling at 2,816 feet on the Leroy Ealy farm. Some gas was found in the Fifty Foot and Thirty Foot sands. Its test on the William Bedillion farm has reached 1,865 feet.

Furman Nuss & Co. are fishing the packer in No. 1 on the S. C. Weir farm which is to be drilled from the Fifty Foot sand. It is about a quarter of a mile south of Van Buren in Washington County. This company is still down fishing on the Jason Buchanan farm west of Point Lookout. In South Franklin Township, E. H. and J. B. Tague are rigging up for No. 11 on the Adaline D. McKennan estate.

In Fayette County, Carnegie Natural Gas Co. has started drilling on the George N. Boyd farm in Jefferson Township.

Oklahoma Fields

(Continued from Page 73)

Co.'s No. 1 Community Flynn, NE cor. NW Section 17-6-3, rig.

Pontotoc County

Beebe Oil Co. had cellar dug for No. 1-A Allen, CSL SW Section 23-5-5, Beebe district, Pontotoc County. Phillips & Milam's No. 1 Layne (formerly reported Mason and others' No. 1 Layne), SW NW NW Section 30-5-5, was completed. It is a 60 bbl. pumper from Hunton lime at 2,285-2,322 feet which had been acidized. Patsy Oil Co. was drilling at 300 feet in No. 3 Johnson, SE SW SE Section 31-4-7.

Manahan Oil Co. and others' No. 2 Reynolds Wagner, SE NE SE Section 18-2-7, in the John Fitts area, which was drilled to 71 feet and shut down, has been abandoned.

Crosbie & Moran have completed No. 1 Hardin, SW SW NE Section 30-2-7, which made a 40-bbl. initial producer at 1,806-14 feet after battling with gas sands at 1,675-87 feet and 1,704-15 feet, which showed a 69,000,000-foot gas production. No. 2 on the lease, NW SW NW Section 30, had 12-inch pipe set at 402 feet. J. C. Shaffer was drilling at 1,535 feet in No. 1-A Martin, NE NW SW Section 30.

Gillette and Kroeger have a machine in for a wildcat test, No. 1 Duver, NW SE Section 36-1-6.

Jefferson County

O. V. Beck's No. 10 Seay, NE NW SW SE Section 34-6s-5w, Jefferson County, a twin to No. 6 Seay, pumped 35 bbls. of oil and 480 bbls. of water in 24 hours from a lime formation at 1,573-74 feet.

Stephens County

Carter Oil Co. made a location for No. 1 Hildebrand, C SW SE NE Section 1-3s-7w, Stephens County. Owl Oil Co. has machine in to start No. 46 Wilson, CWL SE SE NW Section 9-3s-5w.

Merco Oil & Gas Co.'s No. 1 Trout, NW cor. SW Section 1-2s-8w, Stephens County, is a 20-bbl. pumper from sand at 1,448-60 feet and was completed.

Raisen Brothers' No. 9 Brown, NW SW NE SE Section 2-2s-5w, is a 3-bbl. completion at 629-48 feet.

Shasta Oil Co.'s No. 2 Smith, NW SW NE SW Section 31-1s-9w, was dry and abandoned at 2,735 feet.

Machine is in to start Mudge Oil Co.'s No. 7 Oliver, SE cor. Section 22-1s-5w.

Same company's No. 35 Woods, a twin, CWL NW NW NW Section 25-1s-5w, is a 12-bbl. completion at 623-55 feet.

Carter Oil Co. has made a location for No. 1 T. H. McCasland, C NW NW SW Section 22-1s-4w.

Carter County

Mudge Oil Co.'s No. 8 Majors, NW cor. SE Section 25-1s-3w, Carter County, was completed. It produced 147 bbls. initially from broken sands at 2,642 to 2,717 feet. Samedan Oil Co.'s No. 7 Hopson, C SE NE Section 25-1s-3w, swabbed 25 bbls. per hour for four hours from a sand series from 2,513 to 2,593 feet. Samedan Oil Co. has made a location for No. 2 Higgins, NE NW NE Section 36-1s-3w.

Gant & Garvin have made a location for No. 4 Burton, SE NW SE Section 31-1s-2w.

In the Wildcat Jim Pool, Carter Oil Co.'s No. 2 Krieger, NW SE Section 8-2s-2w, was showing for a 30-bbl. well at a total depth of 2,183 feet. Sands at 2,122-32 feet.

Coline Oil Co.'s No. 10 Higgins-F, SE SW NW Section 8-2s-2w, produced 50 bbls. in 24 hours and later 15 bbls. in 24 hours from sands at 1,395 to 2,800 feet.

Skelly Oil Co.'s No. 1 Higgins, SW SE NW Section 8-2s-2w, produced 56 bbls. in 24 hours through tubing, and flowing by heads, from a sand series at 1,371 to 2,775 feet.

Wildcat Operations in Kansas

(Continued from Page 78)

OSBORNE COUNTY

Carmen & Hershey's No. 1 Fritz, C NE NE Sec. 9-10-14w ..... Drlg. 700 ft.

RENO COUNTY

Atlantic Oil Prod. Co.'s No. 1 Phillips, C E½ NW NE Sec. 22-22-6w ..... Dry and abd. 4,080 ft.
L. H. Wentz' No. 1 Metcalf, SE NE SW Sec. 3-24-7w ... Drlg. 2,298 ft.
Sinclair Prairie Oil Co.'s No. 1 Shepard, SE cor. NW Sec. 22-26-9w ..... Drlg. 3,319 ft.

RICE COUNTY

Aylward & Trees' No. 1 Belder, SW SE NE Sec. 27-20-7w ..... Drlg. 2,780 ft.
Continental, Empire and Shell's No. 1 Bennett, NW SE Sec. 25-18-8w ..... Siliceous lime 3,132-75 ft.; swbd. 940 bbls. 21 hrs.
Deitrick et al's No. 1 Fitzpatrick, C NE NE Sec. 36-21-8w ..... S.D. 1,505 ft.
Elwell et al's No. 1 Springer, NE NW Sec. 35-18-10w... S.D. 2,440 ft.
Langston et al's No. 1 Markle, NE SW Sec. 1-20-9w .... Drlg. 1,720 ft.
Reserve Dev. Co.'s No. 1 Heinz, NE SW SE Sec. 8-18-10w. T.D. 3,269 ft.; wtr.; S.D.
Robertson et al's No. 1 Johnson, NW cor. SW Sec. 22-19-8w ..... Location.

ROOKS COUNTY

Ashby et al's No. 1 Doughty, C SW SW Sec. 15-8-19w... T.D. 900 ft.; U.R. 12-in. csg.
Phillips Pet. Co.'s No. 1 Dopita, C SW SW Sec. 31-8-17w.. Re-acidized.

RUSH COUNTY

Central States L. & P. Co.'s No. 1 Basgall, SE cor. Sec. 10-17-16w ..... Location.

RUSSELL COUNTY

C. L. Price et al's No. 1 Bender-B, NW SE Sec. 10-16-13w ..... Material.

SEDGWICK COUNTY

D. Lauck's No. 1 Gillespie, NE SE SW Sec. 6-28-1w.... Fishing 405 ft.
Sovereign Oil Co.'s No. 1 Nichols, C NW SE Sec. 20-25-1w ..... Drlg. 1,623 ft.
Trees Oil, Derby Oil et al's No. 1 McMinn, SW NE Sec. 36-26-1e ..... Drlg. 1,075 ft.

STAFFORD COUNTY

Stanolind O. & G. Co.'s No. 1 Denker, 693 ft. from N line, 330 ft. from W line, SW Sec. 10-23-12w ..... Drlg. 1,620 ft.

SUMNER COUNTY

Morgan & Flynn's No. 1 Mercer, NW NE NW Sec. 36-32-1w ..... Drlg. 2,105 ft.

TREGO COUNTY

Alma Pet. Co. et al's No. 1 Rhodes estate, SW SW Sec. 14-11-23w ..... Set 6-in. csg. 3,700 ft.
Central Commercial's No. 2 King, C SE SW NE ..... Drlg. out cave; T.D. 4,015 ft.

WOODSON COUNTY

Sheely et al's No. 1 Hassenpflug, NW cor. NE Sec. 34-25-14 ..... Rigging up.
Schwartz et al's No. 1 Collins, SW NW NE Sec. 30-23-14.. S.D. 200 ft.

Gulf Coast Fields and Wildcats

(Continued from Page 69)

Humble O. & R. Co.'s No. 6-B Kirby, 593 ft. N of S line, 388 ft. E of W line of lease, or 125 ft. N and 288 ft. W of No. 5 ..... Drlg. rock 1,733 ft.
Moody Corp.'s No. 5-A E. W. Barber, 100 ft. E of W line and 70 ft. N of S line of lease ..... Top salt 1,425 ft.; W.O.C.
Moody Corp.'s No. 6-A Barber, 75 ft. W or E line and 400 ft. N of S line of lease ..... Rigging up.
Sinclair Prairie Oil Co.'s No. 18-A Wilburn, Henry Griffith league, 150 ft. W of No. 17-A and 14 ft. S N line of lease ..... Derrick.
Sun Oil Co.'s No. 9 Chambers Co., 181 ft. W of No. 8 and 50 ft. from N line of lease ..... Drlg. salt 2,211 ft.
Sun Oil Co.'s No. 3 Higgins, 50 ft. E line and direct offset to McAlbert's No. 2 Higgins in Wm. Hodges Sur. ..... T.D. 3,018 ft.; cut and pulled liner; F.A.
Sun Oil Co.'s No. 5 Higgins, 125 ft. W of No. 4 ..... Set 13⅜-in. csg. at 1,392 ft.; drlg. salt 2,532 ft.
Sun Oil Co.'s No. 16 Wilburn fee, 130 ft. W of No. 15 and 40 ft. from N line of 20-acre tract in William Hodges Sur. ..... T.D. 4,463 ft.; oil sand; running tubing.
Texas Co.'s No. 8 Wilburn, 25 ft. W of No. 5 and 50 ft. N of S line in the Henry Griffith League ..... T.D. 5,753 ft.; P.B. to 5,160 ft.; running screen.
Texas Gulf Prod. Co.'s No. 2 Barber, 514 ft. W, 41 ft. S of NE cor. of lease, Henry Griffith League..... T.D. 5,058 ft.; comp. 600 bbls.; ½-in. choke; 190 lbs. pressure.
Texas Gulf Prod. Co.'s No. 8 A. E. Barber, 400 ft. S of N line and 50 ft. E of W line of lease ..... Drlg. rock 3,830 ft.
Texas Gulf Prod. Co.'s No. 4 Wilburn, Wm. Hodges Sur., 330 ft. N of S line, 50 ft. W of E line ..... Drlg. new hole shale and lime 4,500 ft.
Yount Lee Oil Co.'s No. 24 Chambers County, 400 ft. W of No. 23 in line with No. 21 ..... T.S. 1,456 ft.; drlg. salt 2,242 ft.
Yount Lee Oil Co.'s No. 25 Chambers County, 75 ft. S, 50 ft. W of NE cor. of lease ..... Drlg. sand rock 385 ft.
Yount Lee Oil Co.'s No. 6 Phillips, Wm. Hodges Sur. .... T.D. 2,866 ft.; W.O.C.

RABBS RIDGE—FORT BEND COUNTY

Humble O. & R. Co.'s No. 11 T. R. Booth, 281 ft. N, 15 ft. W of NE cor. of A. Myers tract No. 1, 180 acres in J. Rabb Sur. ..... Drlg. 5,240 ft.
Humble O. & R. Co.'s No. 26-A Lockwood & Sharp, 755 ft. N and 14 ft. W of No. 26-B, in J. Rabb Sur. .... Derrick.
Humble O. & R. Co.'s No. 27-A Lockwood & Sharp, 1,149 ft. W of No. 26-A and 755 ft. W of No. 27-B in J. Rabb Sur. ..... T.D. 5,300 ft.; comp. 55 bbls. hr.; ¾-in. choke.
Humble-Gulf's No. 28-A Lockwood & Sharp, 379 ft. from S line and 2,872 ft. from E line of "A" lease in J. Rabb Sur. ..... Location.
Naylor's No. 4 S. B. Gehr, 1,260 ft. from W line and 330 ft. from S line of lease in Samuel Kennedy Sur. ..... T.D. 5,406 ft.; set screen; would n't flow; installing pumping unit.

LONG POINT—FORT BEND COUNTY

Oleson et al's No. 1 McFarland ..... T.D. 1,003 ft.; S.D.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 39 Moore ..... T.D. 3,915 ft.; preparing to set screen.

Gulf Prod. Co.'s No. 40 Moore ..... Building derrick.

HIGH ISLAND—GALVESTON COUNTY

D.E.M. Oil Co.'s No. 2 Great Western ..... Deepened from 152 ft. to 173 ft.; cmtd. 6-in. csg.; W.O.C.

Yount Lee Oil Co.'s No. 4 Broussary & Orme, M. Dunman Sur., 139 ft. SW of No. 3 ..... Top salt 4,565 ft.; T.D. shale and pyrite 5,358 ft.; drlg. hard sand 4,342 ft.

Yount Lee Oil Co.'s No. 24 Cade, 300 ft. W of No. 22, at right angles to a line through 21, 22 and 23, in the N. Fitzsimmons Sur. ..... T.D. 5,929 ft.; comp. 150 bbls. 24 hrs.; pumping.

Yount Lee Oil Co.'s No. 41 Cade, Fitzsimmons Sur. ..... Rigging up.

Yount Lee Oil Co.'s No. 40 Cade, 430 ft. NW of No. 3-B, 360 ft. from E line of lease and in line with No. 39 and No. 2-B, Fitzsimmons Sur. ..... Drlg. hard sand 3,925 ft.

Yount Lee Oil Co.'s No. 3 Mathis, M. Dunman Sur., direct offset No. 1 Spencer ..... Base salt 3,760 ft.; drlg. hard sand 3,975 ft.

Yount Lee Oil Co.'s No. 22 Smith ..... Drlg. shale 2,970 ft.

Yount Lee Oil Co.'s No. 24 Smith ..... Sand 5,929 ft.; S.D.

Yount Lee Oil Co.'s No. 42 Cade, N. Fitzsimmons Sur., half way between Nos. 26 and 28 and 150 ft. E at right angles ..... Derrick.

ARRIOLA—HARDIN COUNTY

Republic-Houston's No. 2-X Arriola fee ..... T.D. 4,573 ft.; P.B. to 2,300 ft.; drlg. shale 4,900 ft.

BATSON—HARDIN COUNTY

Danciger O. & R. Co.'s No. 2 Hooks, W. Donoho Sur., 330 ft. E of CWL, Blk. 24 ..... T.D. 4,795 ft.; flowed salt water; P.B. 4,555 ft.; standing.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 110 Jordit, 200 ft. due S No. 109 .. Drlg. sand and boulders 590 ft.

Seismo Oil Co.'s No. 1 Casewell, 940 ft. S of NW cor. and 600 ft. from E line, B.B.B.&C. Sur. ..... T.D. 3,212 ft.; shut down.

Sinclair Oil Co.'s No. 1 Teel Estate, 3,685 ft. W of E line of league, 4,285 ft. S of N line of league, or 1,032 ft. S of N line and 717 ft. W of E line of 134-A. tract ..... Drlg. shale 3,345 ft.

Skinner Oil Co.'s No. 3 Sessler ..... Cap rock 2,185 ft.; top cap rock 2,150 ft.; S.D.

SOUR LAKE—HARDIN COUNTY

Alpha Pet. Co.'s No. 1 J. M. Weiss, 122 ft. S of Steinberger's No. 1 Weiss in Blk. 25 ..... Drlg. shale 4,000 ft.

Humble O. & R. Co.'s No. 1 Kirby et al, 140 ft. E W line and 300 ft. S N line of old Gulf 170-acre tract, S. Jackson Sur. ..... Derrick.

Parr et al's No. 1 Benard, in W.C.R.R. Sur. No. 69 (west edge) ..... T.D. 7,061 ft.; P.B. 4,800 ft.; swabbing very little oil; S.D.

Steinberger Pet. Co.'s No. 1 Weiss, 150 ft. W of Parr No. 1 and 50 ft. out of SE cor. of Blk. 28, E. B. Williams Sur. ..... Location.

Texas Co.'s No. 305 fee, 375 ft. S, 110 ft. E of No. 299, in Stephen Jackson League ..... T.D. 472 ft.; W.O.C.

Yount Lee Oil Co.'s No. 6 Lynn, 250 ft. from W line and 200 ft. from N line of 43-acre tract in Sour Lake Oil Co. Sub. ..... Drlg. salt 4,949 ft.

GOOSE CREEK—HARRIS COUNTY

Edwards Drlg. Co.'s No. 2 Matthews, E offset to Mirimar's No. 2 Hughes ..... Drlg. 2,150 ft.

Gulf Prod. Co.'s No. 13 St. Land Prod., 38 ft. from E line or 89.4 ft. W of Sun Oil Co.'s No. 1 McFarland, Wm. Scott Sur. No. 67 ..... T.D. 4,680 ft.; P.B. 4,030 ft. to kill gas; perforated 7-in. csg. 4,000-20 ft.; flowed oil, gas and water; breaking down 4-in. drill pipe; T.A.

Gulf Prod. Co.'s No. 18-A Tabb-fee, 217 ft. S of No. 17-A and C of tract in Wm. Scott Sur. ..... Drlg. 4,385 ft.

Herring's No. 1 Williams, 180 ft. from SE cor. and 55 ft. NE of Hybush's No. 3, in W. Scott upper league .. Cellar.

Hoffner & Moore's No. 1 A. A. Wright, 50 ft. N and 50 ft. E of SW cor. of Blk. 7, Wm. Scott Sur., Abst. No. 65 ..... T.D. 5,221 ft., shale; standing.

Humble O. & R. Co.'s No. 80 Simms-Smith ..... Drlg. 641 ft.

Humble O. & R. Co.'s No. 28 Sweet, 13 ft. W of SE cor. of Scott 2½-acre tract and 53 ft. from N line of lease, Wm. Scott Sur. No. 67 ..... Location.

Jay Simmons' No. 1 Dannebaum, 45 ft. from S and 50 ft. from E lines of lease in W. Scott Labor Sur. ... Derrick.

Jay Simmon's No. 1 Kerwin Mitchell, SE cor. of 6-acre tract ..... D.S. test 4,698-4,760 ft.; 12 min.; 1,050 ft. oil, S.W. and gas; drlg. 6,100 ft.

Thomas Drlg. Co.'s No. 1 Jones ..... Drlg. shale 3,260 ft.

Wilhite's No. 1 Gillette ..... T.D. 2,809 ft.; preparing to pump

Wilhite's No. 1 Isenhour ..... Rigging up.

Wilhite's No. 2 Gillette, 100 ft. SW from N line of SW Hoskins tract in Lot 1 and 50 ft. NW from W bank of stream, Wm. Scott Sur. No. 66 ..... Derrick.

HUMBLE—HARRIS COUNTY

Rio Bravo Oil Corp.'s No. 8 fee, 250 ft. E, 100 ft. S of No. 2 fee ..... T.D. 3,899 ft.; prep. to set screen.

Texas Co.'s No. 47 Stevenson, J. B. Stevenson Sur., 859 ft. E, 457 ft. S of NW cor., Lot 1-A ..... T.D. 5,338 ft.; sidetracking, salt 4,011 ft.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Prod. Co.'s No. 10 H. C. Cain, 399 ft. S and 290 ft. E of NW cor. of lease and 217 ft. N of No. 9, 160-acre tract in J. Hamilton Sur. No. 879 ..... Rigging up.

Rio Bravo Oil Corp.'s No. 9-A Settegast, 1,575 ft. N line, 350 ft. E line NE cor. "A" lease, J. A. Kopman Sur. .. T.D. 4,510 ft.; rigging up to work over; standing.

Rio Bravo Oil Corp.'s No. 12-A Settegast, 1,410 ft. N line, 650 ft. E line, J. A. Kopman Sur. ..... Drlg. shale 5,123 ft.

Rio Bravo Oil Co.'s No. 24-A Settegast, J. Kopman Sur. No. 44, 1,000 ft. S, 200 ft. W of NE cor. of "A" lease .. T.D. 4,750 ft.; set screen.

TOMBALL—HARRIS COUNTY

Amerada Pet.'s No. 1 Metzler, 318 ft. from S line and 466 ft. E line of lease in J. House Sur. ..... Rigging up; T.A.

Humble-Magnolia's No. 2 C. F. W. Hendricks, 966 ft. S of N line and 466 ft. W of E line of 96-A. tract in Wm. Heard Sur. ..... Derrick.

Humble O. & R. Co.'s No. 1-B J. F. W. Kobs, 466 ft. from S line and 405 ft. E. of W line of tract, J. Edwards Sur. ..... Drlg. shale 4,472 ft.

Humble O. & R. Co.'s No. 3-B Kobs, 3,132 ft. S of N line, 369 ft. W of E line of lease in J. H. Edwards Sur. ..... Drlg. sand 5,624 ft.

Humble-Magnolia's No. 1 Krug, 400 ft. N and 187 ft. E from SW cor. of J. F. W. Kobs 30.6-acre tract in J. H. Edwards Sur. ..... Location.

Humble-Magnolia's No. 2 Krug, 466 ft. from E line of lease and 800 ft. S of S line of Sherer 112-acre tract in J. H. Edwards Sur. ..... Location.

Humble and Magnolia Pet. Co.'s No. 2 B. J. Petrick, 700 ft. S of N line, 1,171 ft. W of E line of lease in J. M. Hooper Sur. No. A-372 ..... Derrick.

Humble & Magnolia's No. 2 Rudel-Oster, 150 ft. S of Amerada & Stanolind's No. 2 Fletcher, half way between E and W lines of 50-acre tract in J. House Sur. No. 34 ..... Drlg. shale 955 ft.

Humble O. & R. Co.'s No. 1 Werner ..... T.D. 5,599 ft.; W.O.C.

J. E. Mabee's No. 1 W. W. Baker, 440 ft. S of C of N line of 80-acre lease in J. House Sur. ..... Drlg. shale 5,200 ft.

Sun and Humble O. & R. Co.'s No. 1 Meixler, 34 ft. N and E of NE cor. of 2-acre graveyard in 90-acre lease in C. N. Pillot Sur. No. 632 ..... Location.

Texas Co.'s No. 2 Scherer (W. V. Bowles), 2,150 ft. S and 466 ft. W of NE cor. of lease in J. House Sur. .. Elev. 312 ft.; T.D. 5,655 f..; completed 1,250,000 ft. dry gas.

ESPERSON—LIBERTY COUNTY

Cranfill & Reynolds' No. 4 Moores Bluff, 400 ft. S of No. 3 and 534 ft. from E line of tract in Duncan Sur. . T.D. 2,306 ft.; comp. 160 bbls. fluid daily; 40% wtr.

General Crude Oil Co.'s No. 3 Davis, 400 ft. N of No. 2, Joseph Kokernut Sur. ..... Location.

General Crude Oil Co.'s No. 4 Davis, 400 ft. N of No. 3, Joseph Kokernut Sur. ..... Location.

General Crude Oil Co.'s No. 12 Moore's Bluff, 2,100 ft. S of N line and 2,932 ft. W of E line of survey and tract, Moore's Bluff lease ..... Moving in material.

General Crude Oil Co.'s No. 8 Davis, 660 ft. from S and 1,000 ft. from E line of lease in D. Kokernut Sur. ... Drlg. sandy shale 2,428 ft.

HANKAMER—LIBERTY COUNTY

Mirimar Oil Co.'s No. 2 Crow & Jacobs, H.&T.C. Sur. No. 21 ..... Spud.

HULL—LIBERTY COUNTY

Eclipse's No. 4 Barrow ..... Preparing to work over.

Gulf Prod. Co.'s No. 101 Phoenix, E. G. Devore Sur. ..... T.D. 4,195 ft.; comp. 328 bbls.

Gulf Prod. Co.'s No. 102 Phoenix, E. G. Devore Sur. .... Drlg. 4,095 ft.

Gulf Prod. Co.'s No. 103 Phoenix ..... Rigging up.

Houston Prod. Co.'s No. 2 Orgain, 300 ft. E of No. 1 ..... Rigging up to deepen.

Mirimar Oil Co.'s No. 10-A Phoenix, 250 ft. E of No. 4 and 100 ft. from N line of lease in J. Devore Sur. ... T.D. 4,474 ft.; sidetracked 3,832 ft.; drlg. shale 4,453 ft.

Mirimar Oil Corp.'s No. 4-B Phoenix, 200 ft. E of No. 1 and 50 ft. from N line of lease in J. Devore Sur. ... T.D. 6,725 ft.; abd.

Republic Prod. Co.'s No. 152 Dolbear, mid-way between Nos. 59 and 135, in the J. Devore Sur. ..... T.D. 2,211 ft.; comp. 100 bbls. dly.

Republic Prod. Co.'s No. 153 Dolbear, 400 ft. N and 45 deg. E from No. 151, in the J. Devore Sur. .... Drlg. shale 3,107 ft.

Sun Oil Co.'s No. 7-A Carr, 200 ft. W of E line and 277f t. S of N line of lease ..... Drlg. shale 4,315 ft.

Texas Co.'s No. 7 Barrow fee, 458 ft. S and 350 ft. W of NE cor. of tract in J. Devore league ..... Coring sand 4,490 ft.; T.S. 4,453 ft.

LIBERTY COUNTY

Mrs. I. M. Lemon Oil Co.'s No. 1 Richardson, 120 ft. E of Gulf & Humble's No. 1 Carter, in M. G. White Sur. ..... T.D. 3,882 ft.; rerun tubing; standing.

MARKHAM—MATAGORDA COUNTY

Hamil and Powers' No. 3 Myers, 150 ft. from N, 225 ft. NW of No. 1, in Wm. Hadden Sur. ..... Drlg. 420 ft.

Rio Bravo Oil Co.'s No. 1 Sisk, 550 ft. N, 650 ft. W, SE cor. of R. J. Sisk's 158-ac. tract in Lot 2, Wm. Haddon League ..... Derrick.

CONROE—MONTGOMERY COUNTY

Alpha Pet. Co.'s No. 3-B Keystone Mills ..... T.D. 5,040 ft.; drlg. plugs.

American Liberty Oil Co.'s No. 2 Allen ..... Rigging up.

Gulf Coast Drlg. & Prod. Co.'s No. 25 Keystone Mills.. T.D. 5,030 ft.; comp. 68 bbls. hrly.

Gulf Coast Drlg. & Prod. Co.'s No. 26 Keystone Mills.. Drlg. 5,010 ft.

Humble O. & R. Co.'s No. 52 Moore ..... T.D. 5,126 ft.; comp. 77 bbls. hr.; ½-in. choke.

Humble O. & R. Co.'s No. 65-A South Texas Dev. Co. ... T.D. 5,179 ft.; comp. 49 bbls. hr.; ½-in. choke.

Humble O. & R. Co.'s No. 9-B South Texas Dev. Co. ... T.D. 5,131 ft.; comp. 76 bls. hr.; ½-in. choke.

Humble O. & R. Co.'s No. 5 B. E. Jones ..... T.D. 5,125 ft.; W.O.C.

Humble O. & R. Co.'s No. 28 Keystone Mills ..... T.D. 5,120 ft.; W.O.C.

Humble O. & R. Co.'s No. 7-D Keystone Mills ..... Drlg. shale 4,955 ft.

Humble O. & R. Co.'s No. 39 Madeley ..... Rigging up.

Humble O. & R. Co.'s No. 68-A South Tex. Dev. Co. .. Rigging up.

Houston-Tidewater Oil Co.'s No. 10 Hammond, Stewart Sur. ..... Drlg. 2,934 ft.

Pine Tree Oil Co.'s No. 1 South Texas ..... Shale 5,182 ft.; W.O.C.

Sun Oil Co.'s No. 13 Keystone Mills, 704 ft. E from No. 17 well, thence S 282 ft. in A. Steele Sur. .... T.D. 5,129 ft.; comp. 184 bbls.; 2 hrs.; ½-in. choke.

Sun Oil Co.'s No. 14 Keystone Mills, 1,760 ft. from N line, 2,274 ft. from W line of lease in A. Steele Sur... Location.

Texas Co.'s No. 8 Moody, 2,330 ft. from N line, 466 ft. from W line of tract in Ransom House Sur. ..... T.D. 5,134 ft.; preparing to W.O.

PORT NECHES—ORANGE COUNTY

Texas Co.'s No. 2 Orange Natl. Bank, Jacob Beaumont Sur., 1,538 ft. W and 200 ft. S of NE cor. of lease .. T.D. 7,269 ft.; circulating.

Texas Co.'s No. 2-B Polk, 695 ft. N, 150 ft. S of NE cor. of N. Jacob Beaumont Sur. ..... T.D. 6,708 ft.; prep. to set whipstock and sidetrack at 5,000 ft.

LIVINGSTON—POLK COUNTY

Gem Oil Co.'s No. 5 Davis & Holmes, 1,029 ft. from SE line and 328 ft. SW line of 157-acre lease, A. Viesca Sur. ..... Drlg. 4,358 ft.

H. B. Owenby's No. 1 Huff, 75 ft. N of S line, 656 ft. W of E line of lease in A. Viesca Sur. ..... Coring sand 4,350 ft.; no report.

GRETA—REFUGIO COUNTY

Atlantic & Stanolind's No. 3-G J. M. O'Brien, Winfield Sur. ..... T.D. 4,385 ft.; comp. 125 bbls. daily; 3/16-in. choke.

Atlantic & Stanolind's No. 6-A J. J. O'Brien, Ximines Sur. ..... T.D. 4,861 ft.

Floboots Oil Co.'s No. 2-D J. M. O'Brien, E. H. Winfield Sur., 466 ft. S N line and midway E and W lines, Blk. 12 ..... T.D. 330 ft.; W.O.C.

Floboots Oil Co.'s No. 2-E J. M. O'Brien, E. H. Winfield Sur., 466 ft. S N line and midway E and W lines, Blk. 10 ..... T.D. 1,315 ft.; W.O.C.

Floboots Oil Co.'s No. 2-F O'Brien, Peoples Sur., 466 ft. S N line and midway E and W lines, Blk. 8 ..... Rigging up.

Floboots Oil Corp.'s No. 1 M. C. Bauer, 330 ft. N line, 1,724 ft from W line, J. M. Ximines Sur. ..... T.D. 3,487 ft.; flowing gas and S.W.; T.P. 325 lbs., C.P. 650 lbs.

Floboots Oil Corp.'s No. 2-C J. M. O'Brien, 466 ft. from S and E lines of Block 15, Smith Subd., Winfield Sur. ..... Drlg. shale 4,170 ft.

Floboots Oil Co.'s No. 4-C J. M. O'Brien, 503 ft. from E line and 466 ft. from S line of Blk. 8, Peoples Sur. .. W.O.C.; T. D. 4,384 ft.

Hewitt & Dougherty's No. 1 Lamber:, 466 ft. SW line and 466 ft. W line of Harper Sur., Blk. 18 ..... Lime 3,162 ft.; S.D.

Houston Oil Co.'s No. 14 W. J. J. Heard, 550 ft. NW of No. 5, and 330 ft. NE of SW line of lease ..... Drlg. 1,200 ft.

Houston Oil Co.'s No. 15 Rooke, 160 ft. S along E line along NE cor., 150 ft. W at right angles..... Drlg. shale and lime 3,000 ft.

Humble O. & R. Co.'s No. 5 Fannie Heard, 1,490 ft. from S line, 450 ft. from W line of 337-ac. tract in Crunk Sur. ..... Rigging up.

Humble O. & R. Co.'s No. 4 Fannie Heard, 1,216 ft. from E line, 466 ft. from N line of lease in Ximines Sur. ..... W.O.; drlg. shale 5,300 ft.

Humble O. & R. Co.'s No. 5 J. F. B. Heard in Peopes Sur. ..... T.D. 4,386 ft.; comp. 1,156 bbls. day; ⅝-in. choke.

Humble O. & R. Co.'s No. 6 J. F. B. Heard ..... Drlg. shale 2,565 ft.

Stanolind Oil & Gas Co.'s No. 6-B J. M. O'Brien, Peoples Sur. ..... T.D. 4,384 ft.; W.O.C.

Stanolind Oil & Gas Co.'s No. 3-A J. M. O'Brien, Peoples Sur., begin at NE cor. of "A" lease, thence W along N line 1,509 ft., thence S at right angles 466 ft., S offset to No. 4-B ..... S.D. 4,384 ft.

Stanolind Oil & Gas Co.'s No. 4 O'Connor, 466 ft. from W and S lines of 100-acre lease in Crunk Sur. .... T.D. 4,385 ft.; pulling liner.

United Prod. Co.'s No. 15 Fox, 330 ft. W of No. 2-A in Wm. Hews and L. Brown Sur. ..... T.D. 5,747 ft.; to P.B. to 4,400 ft.

United Prod. Co.'s No. 14 W. J. Fox et al, 466 ft. from N line and 1,060 ft. W of No. 11 on 848-acre tract in Wm. Hews and L. Brown Sur. ..... Coring hard shale 5,712 ft.
United Prod. Co.'s No. 8 Lambert ..... Coring sandy shale 3,478 ft.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 3 Schermer, N. Clay Sur., 330 ft. NW, 330 ft. SW line of lease ..... T.D. 4,499 ft.; prep. to test.
Sun Oil Co.'s No. 5 Schlettman ..... Drlg. 1,126 ft.

SOUTH LOUISIANA FIELDS

BLACK BAYOU—CAMERON PARISH

Shell Pet. Corp.'s No. 3 State ..... Coring 5,276 ft.

BOSCO—ACADIA AND ST. LANDRY PARISHES

Humble O. & R. Co.'s No. 1 Joseph Berb, located on 100-acre tract lease in Section 21-8s-3e, about a mile and a half NW of the producer ..... Location.
Shell Pet. Corp.'s No. 1 E. M. Eliaboutrout, in Section 22-8s-3e, 1½ mile due N of discovery well ..... Location.
Standard Oil Co. of Kans.' No. 1 Joseph Mouton ..... Derrick.
Superior Oil Co.'s No. 1 J. Sidney Arceneaux et al, 1,665 ft. N and 439 ft. W of SE cor. of Sec. 25-8s-3e ..... Drlg. shale and gravel 904 ft.
Superior Oil Co.'s No. 1 U. T. Iseringhauser, 1,351 ft. E and 502 ft. S of NW cor. of Sec. 35-8s-3e ..... Drlg. shale 7,063 ft.
Superior Oil Co.'s No. 1 Leo E. Kahan et al, 2,381 ft. N and 468 ft. W of SE cor. of Sec. 33-8s-3e ..... Drlg. sand and shale 6,998 ft.
Superior Oil Co.'s No. 1 Elize Mire, 890 rt. S and 597 ft. W of NE cor. of Sec. 33-8s-3e ..... Drlg. shale 5,857 ft.
Superior Oil Co.'s No. 1 Looanstie Richard, 2,878 ft. S and 465 ft. W of NE cor. of Sec. 34-8s-3e ..... Drlg. shale 5,050 ft.
Superior Oil Co.'s No. 1 Marcellus Savoie, 2,201 ft. S and 761 ft. W of NE cor. of Sec. 27-8s-3e ..... T.D. 220 ft.; W.O.C.

CAILLOU ISLAND—TERREBONNE PARISH

Texas Co.'s No. 12 State Caillou Island, 2,420 ft. E and 73 ft. S of NW cor. of Sec. 20-23s-20e ..... Capping foundation.
Texas Co.'s No. 13 State Caillou Island, 500 ft. SW of No. 11 well ..... Drlg. shale 2,867 ft.

CALCASIEU LAKE—CAMERON PARISH

Texas Co.'s No. 10-A State, 16,855 ft. W and 3,270 ft. N of NE cor. Sec. 1-14s-9w in Twp. 13s-9w ..... Drlg. shale 4,503 ft.

CAMERON MEADOWS—CAMERON PARISH

Burton-Sutton Oil Co.'s No. 1 School Land, 2,260 ft. W and 20 ft. N of SE cor. of Sec. 16-14s-13w ..... Milling out csg. 4,183 ft.
Burton-Sutton Oil Co.'s No. 4 School Land, 2,891 ft. W and 150 N of SE cor. of Sec. 16-14s-13w ..... Driving piling.
Humble O. & R. Co.'s No. 8 Cameron Meadows, 2,895 ft. W, 150 ft. S of NW cor. Sec. 21-14s-13w ..... Drlg. shale 2,935 ft.
Humble O. & R. Co.'s No. 1-B Cameron Meadows, 250 ft. W and 2,640 ft. S of NE cor. of Sec. 24-14s-14w.. Drlg. shale 3,612 ft.
Texas Co.'s No. 1 Miami Corp. ..... Drlg. shale 2,010 ft.

CHOCTAW FIELD—IBERVILLE PARISH

Standard Oil Co.' of Louisiana's No. 6 Myrtle Grove Wilbert, Sec. 52-9s-11e ..... Drlg. shale 1,140 ft.

EDGERLY—CALCASIEU PARISH

Union Sulphur Co.'s No. 1 La Prairie Narrone, 1,061 ft. N, 250 ft. W of SW cor. SW Sec. 21-9s-11w ..... Salt 6,520 ft., T.D.: standing.

FOUR ISLAND—TERREBONNE PARISH

Texas Co.'s No. 3 State, Four Island ..... Drlg. hard sand 1,178 ft.
Texas Co.'s No. 6 State, Four Island ..... Dredging canal.
Texas Co.'s No. 7 State, Four Island ..... Dredging canal.

GARDEN ISLAND—PLAQUEMINES PARISH

Texas Co.'s No. 11 Garden Island, 4,191 ft. S and 1,504 ft. W of NE cor. Sec. 107-23s-32e ..... T.D. 1,675 ft.; S.D.
Standard Oil Co. of Louisiana's No. 6 Myrtle Grove Wilbert, Sec. 52-9s-11e ..... Moving in rig.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 6 Alliance Trust, 667 ft. E. 1,787 ft. S line of lease, Sec. 34-11s-1w ..... T.D. 7,237 ft.; reaming.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 2 Hanszen, 400 ft. W and 200 ft. S of No. 1 in Sec. 14-12s-10w ..... Drlg. rock 6,454 ft.
Gulf Prod. Co.'s No. 14-A Irwin, 300 ft. SE of No. 13-A .. Drlg. 6,040 ft.
Wilfred LaHay's No. 1 Roux, Sec. 36-12s-10w ..... Drlg. shale 3,660 ft.
Sutton Oil Co.'s No. 1 Portier, 2,930 ft. W and 1,220 ft. N of SE cor. of Sec. 22-12s-10w ..... Derrick.
Texas Co.'s No. 10-B State, 1,000 ft. E, 200 ft. N of NE cor. Sec. 13-12s-10w ..... Drlg. shale 7,383 ft.
Texas Co.'s No. 12-B State, 500 ft. SE of No. 10-B or 1,360 ft. E and 149 ft. S of NE cor. of Sec. 13-12s-10w ..... Derrick.
Union Sulphur Co.'s No. 1 Barbee est., 1,720 ft. N line, 320 ft. E of SW cor. Sec. 12-12s-10w ..... T.D. 7,986 ft.; P.B. to 6,729 ft.; drlg. 6,845 ft.
Union Sulphur Co.'s No. 9 Humble, 300 ft. E and slightly N of No. 1 well, or 830 ft. N and 270 tf. E of the SW cor. of Sec. 12-12s-10w ..... Drlg. sand 4,261 ft.
Yount Lee Oil Co.'s No. 11 Gulf Land, Sec. 14-12s-10w .. Stuck D.S.; T.D. 7,044 ft.
Yount Lee Oil Co.'s No. 14 Gulf Land ..... Coring sand 4,798 ft.

IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Barnsdall Oil Co.'s No. 2 Caffal ..... Rigging up.
Barnsdall Oil Co.'s No. 6 Fontenot, 330 ft. from N and W lines of lease in Sec. 7-9s-6w ..... Drlg. 1,534 ft.
Magnolia Pet. Co.'s No. 2 Gillison, 990 ft. W and 200 ft. N of SE cor. of lease in Sec. 12-9s-7w ..... Drlg. 1,390 ft.
Magnolia Pet. Co.'s No. 7 Wait ..... Derrick.
Magnolia Pet. Co.'s No. 8 Wait, 998 ft. W and 330 ft. N of SE cor. of 160-acre lease ..... T.D. 6,896 ft.; bringing in.
Shell Pet. Corp.'s No. 2 Ardoin ..... T.D. 7,337 ft.; reaming.
Shell Pet. Corp.'s No. 8 Heyd ..... Drlg. shale 6,560 ft.
Shell Pet. Co.'s No. 9 Heyd, 998 ft. W and 330 ft. S of NE cor. of 320-acre lease ..... Drlg. sticky shale 5,965 ft.
Shell Pet. Co.'s No. 4 E. D. Stafford, 990 ft. S and 330 ft. W of NE cor. of lease ..... Coring sand and shale 6,343 ft.

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 13 Houssiere-Latrielle, Sec. 47-9s-2w, 300 ft. E of No. 12 ..... T.D. 7,354 ft.; comp. 325 bbls. through 5/16-in. choke.

LAKE BARRE—TERREBONNE PARISH

Texas Co.'s No. 10 L.L.&E., 4,543 ft. S, 503 ft. W of NW cor. Sec. 30-21s-20 ..... T.D. 3,690 ft.; S.D.
Texas Co.'s No. 24 Lake Barre ..... Drlg. anhydrite 1,834 ft.
Texas Co.'s No. 28-D State Lake Barre, 300 ft. SW from No. 27 in Sec. 40-21s-19w ..... Drlg. anhydrite 3,437 ft.

LAKE PELTO—TERREBONNE PARISH

Texas Co.'s No. 11 Lake Pelto, 1,600 ft. SW of No. 5.... Rigging up.
Whitstone O. & G. Co.'s No. 1 Buckley, 300 ft. S and E, of NW cor. SW SW Sec. 25-19s-16e ..... Drlg. shale 1,860 ft.

LEESVILLE—LAFOURCHE PARISH

Robert Bowles' No. 2 Crosby, 2,408 ft. N and 1,952 ft. E of SW cor. of Sec. 26-21s-22e ..... T.D. 3,683 ft.; comp. 720 bbls. through ⅝-in. choke.
Ben Coil and Texas Co.'s No. 1 LaFourche ..... Drlg. shale 3,672 ft.
Emerald Pet. Co.'s No. 3 State of Louisiana ..... T.D. 3,706 ft.; W.O.C.
Emerald Pet. Co.'s No. 4 State of Louisiana ..... Drlg. shale 2,400 ft.
Emerald Pet. Corp., No. 5 State of La., 1,878 ft. N of No. 1 well in Sec. 26-21s-22e ..... Derrick.
Emerald Pet. Corp.'s No. 6 State of Louisiana ..... Rigging up.
Gulf Ref. Co.'s No. 3 Allen Land Co., Sec. 26-21s-22e .... T.D. 3,650 ft.; comp. 50 bbls. hr.; ½-in. choke.
Gulf Ref. Co.'s No. 5 L. Bernard ..... Drlg. 360 ft.
Frank L. Hill's No. 1 Bernard, 1,422 ft. N and 808 ft. E of SW cor. Sec. 26-21s-22e ..... Location.
Lincoln Oil Co.'s No. 1 Constantine ..... Drlg. gumbo 1,015 ft.
Lincoln Oil Co.'s No. 6 State, 3,750 ft. N and 1,200 ft. E of SW cor. of Sec. 26 ..... Drlg. oil sand 3,700 ft.
Southern Sulphur Co.'s No. 1 Largrenze ..... T.D. 4,225 ft.; T.A.
Texas Co.'s No. 14 L.L.&E. ..... T.D. 3,831 ft.; wtr. sand.
Texas Co.'s No. 16 L.L.&E. ..... T.D. 3,415 ft.; wtr. sand.
Texas Co.'s No. 17 L.L.&E., 1,821 ft. S and 122 ft. E of NW cor. of Sec. 27-21s-22e ..... Set surface csg.

LOCKPORT—CALCASIEU PARISH

Magnolia Pet. Co.'s No. 8 Farquhar, 350 ft. S, 190 ft. NE cor. NE¼ of SE¼, Sec. 8 ..... T.D. 5,634 ft.; pulling screen.
Magnolia's No. 25 Miller, 400 ft. N, 544 ft. W of Sec. 9-10-9, W of SE cor. NW ..... T.D. 4,393 ft.; R.U. to deepen.
Magnolia Pet. Co.'s No. 26 Miller, 480 ft. S, 780 ft. E NW cor. SW¼ NW¼ Sec 9 ..... T.D. 4,386 ft.; rigging up to deepen.
Strake Oil Co.'s No. 1 Miller, 500 ft. due N of Yount Lee's No. 1 Miller, Sec. 8-10s-9w ..... Drlg. shale 6,413 ft.
Union Sulphur Co.'s No. 1 Farquahar, 200 ft. S and W lines, NE cor. SW SE Sec. 36-12s-10w, 2-ac. tract .. T.D. 7,468 ft.; preparing to sidetrack.
Union Sulphur Co.'s No. 6 Moss, between Nos. 2 and No. 5 ..... Drlg. shale and lime 5,260 ft.

PORT BARRE—ST. LANDRY PARISH

Gulf Ref. Co.'s No. 6 Wilson-Cochran ..... T.D. 3,000 ft.; stuck D.S.
Texas Co.'s No. 17 Botney Bay, 1,800 ft. S & deg. W, 600 ft. N 82 deg. most southern NE 560 deg. tract, Sec. 4-6s-5e ..... Sand 3,329 ft.

SORRENTO—ASCENSION PARISH

Union Sulphur Co.'s No. 26 United Land ..... Drlg. 1,500 ft.

STARKS—CALCASIEU PARISH

Gulf Ref. Co.'s No. 35 Lutcher Moore, Sec. 19-9s-8w ... Rigging up.
Union Sulphur Co.'s No. 5 Industrial Lbr. Co., 300 ft. S of No. 4, Sec. 30-9s-12w ..... Drlg. shale 5,213 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 776 fee ..... Drlg. sticky shale 3,852 ft.
Union Sulphur Co.'s No. 788 fee, 602 ft. S, 1,209 ft. W of C Sec. 29-9s-10w .... T.D. 6,103 ft.; hard shale and lime 4,589 ft.
Union Sulphur Co.'s No. 794 fee ..... Coring sand 4,683 ft.
Union Sulphur Co.'s No. 795 fee ..... Location.
Union Sulphur Co.'s No. 796 fee ..... T.D. 1,918 f...; P.B. 1,893 ft.; W.O.C.
Union Sulphur Co.'s No. 797 Fee, 1,682 ft. W, 418 ft. N of Center of Sec. 29-9s-10w ..... Derrick.
Union Sulphur Co.'s No. 798 Fee, 673 ft. N, 575 ft. W of center of Sec. 29-9s-10w ..... Drlg. rock 1,674 ft.
Union Sulphur Co.'s No. 799 fee ..... Drlg. rock 1,841 ft.
Union Sulphur Co.'s No. 1 Bernard Ulrich, 75 ft. out of SW cor. Sec. 19-9s-10w ..... T.D. 5,738 ft.; sidetracked at 5,585 ft.; drlg. rock 5,712 ft.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 12 Yount Lee fee, 800 ft. S of No. 11, in line with Nos. 9 and 10, Sec. 12-13-3w ..... T.D. 7,439 ft.; S.D.

WHITE CASTLE—IBERVILLE PARISH

Shell Pet. Corp.'s No. 8 Wilbert, 717 ft. N 60 deg. 30 min. E from SE of Lot 2 of Fractional Sec. 9, in Sec. 1-11s-12e ..... Sand 4,573 ft.; abd.

VINTON—CALCASIEU PARISH

Gulf Ref. Co.'s No. 72 G. N. G., 643 ft. E, 50 ft. S, NW cor. NE SE Sec. 33-10s-12w ..... T.D. 3,276 ft.; hard shale; washing to bottom.
Tri-Oil Co.'s No. 1 Matilda Gray, 38 ft. W, 35 ft. N. of SE cor. NE SW NE Sec. 33-9s-12w ..... T.D. 3,535 ft.; prep. to deepen.
Vinton Oil Co.'s No. 6 Gray ..... Rigged up to deepen; T.D. 3,408 ft.
Wilson Broach Co.'s No. 11 Wilson strip (workover)..... Sand 4,110 ft.; sidetracked 3,260 ft.
Wilson Broach Co.'s No. 15 Wilson strip ..... T.D. 3,256 ft.; pumping 240 bbls. daily; comp.

MISCELLANEOUS WILDCATS

TEXAS

BRAZORIA COUNTY

C. & R. Dev. Co.'s No. 1 National Life Co., 340 ft. from W line and 340 ft. from N line of 100-acre tract out of W end Nos. 3 and 4 in Henry Austin League No. 4, Abst. No. 12 ..... Rigging up; S.D.
Danciger O. & R. Co.'s No. 3-A Hunt, 2,100 ft. from E, 2,000 ft. from S lines of Hunt's 1,000-ac. tract in W. C. Carson Sur. ..... T.D. 6,797 ft.; fishing 12 fourbles drill stem.
Danciger Oil & Ref. Co.'s No. 1-B Hunt, 1,400 ft. from NW line and 1,750 ft. from NE line of 1,600-acre tract in W. C. Carson Sur. ..... Sand 6,875 ft.; cmtd. back 6,813 ft.; drilled 6,852 ft.; washed and flowing fresh water; T.P. 2,200 ft.
Danciger Oil & Ref. Co.'s No. 1 Stark-Brown, 330 ft. out of most easterly NE cor. of lease in Perry & Austin Sur. ..... T.D. 3,965 ft.; S.D.

BRAZOS COUNTY

M. S. Broach's No. 1 Buck Wallace, 1,000 ft. from S line, 400 ft. from W line of 251-ac. tract in G. W. Singleton Sur. ..... Drlg. 410 ft.
H. Elliott et al's No. 1 W. F. Odom, near center of 379-ac. tract in SW cor. of Isack Curil Sur. ..... Cmtd. surface csg. 30 ft.
F. H. Scott's No. 1 Klintworth, I. Curd Sur., 300 ft. from N line, 400 ft. from E line ..... T.D. 2,500 ft.; fighting gas.
D. W. Young, Jr.'s (H. L. Bleam) No. 1 Harrison, 300 ft. from S and W lines of lease in J. D. Allcorne Sur. ..... Spudded and S.D.

BURLESON COUNTY

Southern Seaboard Co.'s No. 1 J. H. Coulter, 9,400 ft. from SW line and 2,200 ft. from NW line of 1,176-acre tract in SE cor. of County in A. Kennon Sur.. Derrick.

CALHOUN COUNTY

Continental Oil Co.'s No. 1 American Nat. Realty Co., C of NE of Sec. 6, Blk. C ..... Drlg. 2,741 ft.
Herman Heep's No. 3 Welder ..... Location.
Herman Heep Oil Co.'s No. 1-B F. Welder ..... Coring sand 3,911 ft.
J. H. Meek et al's No. 1 R. Adamans, C of NW line of Sec. 45, 2½ miles NE of McCamey ..... Location.

CHAMBERS COUNTY

John H. Carreker's No. 1 B. Weaver, 404 ft. out of SE cor. of lease in A. Weaver Sur. ..... Drlg. 2,180 ft.; no report.

COLORADO COUNTY

Coyle-Concord Oil Co.'s No. 1 Nelson, 3,200 ft. SE of NW cor. of section, 2,200 ft. SW at right angles in L&G.N. Sur. ..... T.D. 4,052 ft.; R.U. and S.D.
Union Central Oil Co.'s No. 1 Mann, 620 ft. from W line and 330 ft. from N line of 20-acre tract in J. L. Dugat Sur. ..... Location.

FAYETTE COUNTY

Colorado Oil Co.'s No. 1 Anders ..... Drlg. soft sand 2,620 ft.; no report.

FORT BEND COUNTY

Joe Moffat's No. 1 Blakly, 100 ft. from N and W lines of Lot 4, Block C ..... T.D. 417 ft.; S.D.
J. E. Selber's No. 1 J. B. Farmer, 150 ft. out of most southerly cor. of 50-ac. tract in Jas. Scott Sur. ... Rigging up.

GALVESTON COUNTY

George K. Spoor's No. 1 Maco Stewart, 1,626 ft. N of SE cor. of Alex Farmer Sur. and 1,175 ft. E in W. K. Wilson Sur. (4 miles S of Dickinson) ..... T.D. 6,196 ft.; sand 6,190-96 ft.; S.G.; reamed to bottom and prep. to test.
Humble O. & R. Co.'s No. 1 Maco Stewart, C of E and W lines of 400-acre tract in John Sellars Sur., S of Dickinson Bayou, 3 miles N of Spoor well ..... Drlg. shale 2,670 ft.

GRIMES COUNTY

Marshall et al's No. 1 J. W. Dodd, 400 varas S and 275 varas W of NE cor. of 150-acre Dodd tract in Timothy Jones Sur. ..... Old T.D. 810 ft.; rigged up to deepen.
W. D. Roan et al's No. 1 D. C. Kelly, 1,532 ft. from N line and 168 ft. from E line of U. Sanders Sur., near Carlos ..... Derrick.

Clark & Dodd's No. 1 Murry, 150 ft. W line, 300 ft. S line, Anderson Sur. ..... S.D. 1,365 ft.

HARDIN COUNTY

Wilcox Oil & Gas Co.'s No. 1 Sternberger, 1,328 ft. N of S line and 1,311 ft. W of E line of C. Dorsey Sur. No. 1 ..... Drlg. hard shale and gumbo 2,800 ft.

HARRIS COUNTY

C. C. Foster and others' No. 1 H. K. Johnson, 2,000 ft. from S line and center of E and W lines of G.C.&S.F. Sur. ..... Rigged up and S.D.

General Crude Oil Co.'s No. 1 Rorick, est. 5,606 ft. S of N line of survey and 1,546 ft. W of E line of 1,426-acre tract in John C. Ogburn Sur. ..... Rigging up.

Glenn H. McCarthy's No. 2 Preston on 80 ac. in Sec. 2, Blk. 9, 4 miles W of LaPorte ..... Location.

Imperator Oil Co.'s No. 1 Brooks Est., 7,400 ft. S and W of NE cor. of R. & R. Vince Sur. ..... Derrick.

J. E. Seiber's No. 1 Tyrell & Gareth, 2,300 ft. from E line and 2,400 ft. from N line of survey, Lot 18, Blk. 20, Highland Subd., Ashbell Smith Sur. ..... Drlg. 6,500 ft.

Loring Oil Co.'s No. 1 Westmoreland, Lot 3, Blk. 33, Westmoreland Addition ..... Set surface csg. and W.O.C.

W. U. Paul's No. 1 E. M. House, 2,200 ft. N and 1,000 ft. E of NE cor. of E. Benson Sur. in M. Magruder Sur. ..... Set 10-in. at 1,000 ft., S.D.

JACKSON COUNTY

Encio Gas Co.'s No. 1 J. H. Drummond, 330 ft. out of most easterly NE cor. of Drummond 499-ac. tract .. Rigging up.

Encio Gas Co.'s No. 1 Siedel & Simmons, 150 ft. from SW line or 300 ft. NE at right angles from No. 1 Toney, in Raymond Musquiz Sur. ..... Drlg. 4,500 ft.

Heep Oil Co.'s No. 1 R. Welder, 1 mile SW of Plymouth discovery ..... Location.

JASPER COUNTY

Louis Franklin's No. 1 Cartwright, 360 varas E line and 740 varas S line of Lot 19, Edward Legrande Sur. ... T.D. 5,108 ft.; abd.

JEFFERSON COUNTY

Gulf Prod. Co.'s No. 1 I. W. Jumper, 700 ft. W, 350 ft. S of NE cor. of 260-ac. tract in W. H. Smith League. Drlg. 3,005 ft.

Lucky Strike Oil Co.'s No. 1 Walker, D. Easley Sur., 2,100 ft. N, 1,400 ft. E of NW cor. of Lot No. 13 .... S.D. 1,708 ft., shale and lime

Sun Oil Co.'s No. 1 H. Long, 1,500 ft. N line, 990 ft. E line of lease ..... T.D. 7,138 ft.; reaming.

LIBERTY COUNTY

Extension Oil Co.'s No. 1 J. A. Lovett, 200 ft. from E and 600 ft. from S line of lease, P. P. Deevers Sur... Drlg. shale 2,275 ft.

Gulf Prod. Co.'s No. 3 Kirby, John Pleasants Sur., 1,866 ft. S of No. 1 ..... Hard shale 8,734 ft.; P.B. to 5,300 ft.; prep. to sidetrack.

Gulf Prod. Co.'s No. 4-C Kirby, 1,700 ft. due W of No. 1 discovery well in John Pleasant Sur. ..... Drlg. 3,300 ft.

H. Sample's No. 1 Security Trust Co., 466 ft. from S and E lines of N 600 ac. of Lot 3 of H. Sample Subd. of J. Faulk Sur. ..... T.D. 6,818 ft.; abd.

Thomas et al's No. 1-A Eicke, 660 ft. from W line and 2,350 ft. from S line of tract in Green Sur. ..... T.D. 5,058 ft.; D.S. test 5,025 ft. ¼-in. choke, 5 min., 8 thribbles mud; S.D. orders.

MADISON COUNTY

Hall Edwards et al's No. 1 Fulcher, 1,161 ft. from E line and 1,633 ft. from N line of Fulcher Sur. ..... Drlg. 2,110 ft.

MATAGORDA COUNTY

Continental Oil Co.'s No. 1 Robbins ..... Spud.

Dr. Griffith's No. 1 fee, 3,000 ft. from N line and 3,000 ft. from W line of Wm. E. Bell Sur. ..... Rigged up and S.D.

Olis Consolidated's No. 2 Hawkins, 200 ft. due NE of No. 1 well ..... T.D. 4,900 ft.; abd.

United North & South Dev. Co.'s No. 1 Unit 4, Buckeye farm, J. C. Keller league, 314 ft. N line and 202 ft. E line of lease ..... T.D. 7,871 ft.; tested S.W.; run string 4½-in. blank liner to shut off water.

United North & South Dev. Co.'s No. 1 Unit 6 (No. 2 Stoddard), 25 ft. each way out of NW cor. of Lot 19, Buckeye townsite ..... T.D. 9,457 ft.; shot D.S. 5,750 ft.; sidetracked at 5,500 ft.; drlg. 5,689 ft.

United North & South Dev. Co.'s No. 1 Unit No. 55, 250 ft. N and 300 ft. W of SE cor. of Unit No. 58 ..... Derrick.

MONTGOMERY COUNTY

Baker et al's No. 1 Benker, D. James Sur. ..... O.T.D. 4,921 ft.; sidetracked 3,823 ft.; sand 4,645-67 ft.; T.D. 4,690 ft.; Schlumberger test showed S.W.; S.D.

Deering & Frazier's No. 1 L. Hicks, T. Taylor Sur., 660 ft. S and W of NE cor. of 565-acre tract ..... T.D. 998 ft.; W.O.C.

Humble O. & R. Co.'s No. 1 Texas Long Leaf Lumber Co., 466 ft. out of SE cor. of 2,000-acre tract in Walker County, S.L. Sur. ..... T.D. 6,238 ft.; abd.

Steen Drlg. Co.'s No. 1 Long Bell Lbr. Co., 440 ft. S and E from NW cor. of Wilson Barker Sur. ..... T.D. 6,041 ft.; P.B. to 5,841 ft.; flowing 70 bbls. white distillate daily through ¼-in. choke; 1,500 lbs. pressure with estimated 7,000,000 ft. gas.

ORANGE COUNTY

Blue Line Oil Co.'s No. 1 Godwin, Richard Ballew Sur., 300 ft. from E line and 150 ft. from NE line of Godwin 20-acre tract ..... S.D. shale 1,255 ft.

Texas Louisiana Oil Co.'s No. 1 Starks, 2,450 ft. N of NW cor. M. Delano Sur. 68, 10,500 ft. E at R/A .... T.D. 5,055 ft.; S.D.

POLK COUNTY

Alpha Pet. Co.'s No. 1-B Kirby & West, 3,000 ft. E of Schwab's No. 2 and 150 ft. N of S line of 100-acre tract and survey in G. S. Thomas Sur. ..... T.D. 4,899 ft.; prep. to test.

Howard Dailey et al's No. 1 Z. B. Knox, 1,450 ft. W and 1,920 ft. S of NE cor. of F. Chairs Sur., 1½ mile NE of Corrigan ..... Derrick.

REFUGIO COUNTY

C. B. Bunte's No. 2 Rook, 12,400 ft. from W and 11,500 ft. from N line of Antonio De Lavina Sur. ..... Drlg. 5,575 ft.

Bunte's No. 3 Rooke, Antonio De Lavina Sur. ..... T.D. 5,560 ft.; reaming.

Cox et al's No. 1 F. W. Bissett, J. Crockett Sur. ..... Drlg. 5,775 ft.

Heard-Holland Oil Co.'s No. 1 Peck, 366 ft. N and W out of NW and SW of Bonnie View Subd. ..... T.D. 5,351 ft.; D.S. test 5,330-37 ft., 11 mins., 400 lbs. pressure, ¼-in. choke top and 5/16-in. choke on bottom; D.S. test 5,-337-51 ft. showed 220 lbs. pressure 11 mins., and 100 ft. mud cut with gasoline and some fresh water; prep. to deepen.

G. Jeffries' No. 1 James F. Power, 759 ft. from N and 1,812 ft. from E lines of 500-acre lease in J. J. Garza and J. Vidaurri Sur. ..... Drlg. rock 3,877 ft.

Nesral-Baymore's No. 2 E. Heard, Ximines Sur. ..... Drlg. shale 1,487 ft.

Quintiana's No. 1 Thos. O'Connor, 8 miles NE of town of Refugio and 3 miles SE of Greta Field ..... D.S. test 4,909-50 ft. in 4½ mins., 550 lbs. pressure and 12 ft. mud cut with oil and recovered 3 gals of 50 gravity oil; T.D. 5,159 ft.; S.D.

Standard Oil Co. of Kansas' No. 1 Thos. O'Connor, Crunk Sur. ..... Drlg. 5,263 ft.

SAN AUGUSTINE COUNTY

Fidelity Exploration Co.'s No. 1 Bryan & Flourney, 1,926 ft. from N and 725 ft. from E lines of Sec. 14, S.P.R.R. Sur. ..... T.D. 2,005 ft.; S.D.; moving in heavy rig to drill to Woodbine.

SAN JACINTO COUNTY

Darby Jones' No. 1 McBee ..... T.D. shale 2,950 ft.; S.D.

Turnbull & Irwin's No. 1 Peoples State Bank, 1,360 ft. E of SW cor. of Peoples State Bank fee in L. D. Martinez Sur. ..... Derrick.

TYLER COUNTY

Boone-Wallace & Lane's No. 1 Cruse ..... Rigging up.

VICTORIA COUNTY

C.R.&G. Drlg. Co.'s No. 1 R. C. Roos, 436 ft. from N line and 1,666 ft. from E line of tract in M. A. Castanon Sur. ..... Drlg. green shale 5,625 ft.

Gulf Prod. Co.'s No. 6 Keeran, begin at intersection of R.R. and SW line of survey, thence NE along R.R. 6,257 ft., thence NW at r/a 2,539 ft. in the M. De Leon Sur. ..... Location.

Humble O. & R. Co.'s No. 1 McFadden est., 2,000 ft. S 15 deg. W of Lion O. & R. Co.'s No. 1 McFadden in C. O. Edwards Sur. ..... Location.

Humble O. & R. Co.'s No. 1 Mitchell, 1,401 ft. from NE and NW lines of 5,000-acre tract in E. Benavides Sur. ..... Drlg. 4,975 ft.

Petrol Corp.'s No. 1 John Machalic, 1,330 ft. out of S cor. of 13⅓-acre tract, Rafael Mancha Sur. ..... T.D. 2,875 ft.; fishing stuck D.S. 200 ft. off bottom.

Texas Co.'s No. 2 McFaddin, 9,150 ft. S and 200 ft. E at right angles out of NW cor. of C. M. B. Hoyt Sur. ..... T.D. 2,025 ft.; pulling stuck D.S.

WALKER COUNTY

George W. Strake's No. 1 G. P. Thompson, 1,298 ft. from N line and 188 ft. from W line of 103.9-acre tract of Jackson Crouch Subd. of Jose Marie de la Garza Sur. ..... Drlg. 1,860 ft.

WALLER COUNTY

Amerada & Stanolind Oil & Gas Co.'s No. 1 Mary Manor, C of Sec. 93, Blk. 1, H.&T.C. Sur. ..... T.D. 6,713 ft.; D.S. test 6,583-6,623 ft.; built up 350 lbs. pressure in 10 min.; ¼-in. choke; bottom; ⅜-in. choke top; 150 ft. mud with distillate and 480 ft. S.W.; fishing 2 joints D.S. and core barrel.

L. W. Capps and C. J. Sloan's No. 1 Vaughn, 1,200 ft. N of Kirby's No. 1 Vaughn, J. MacFarland Sur. No. 46 ..... T.D. 2,353 ft.; shale; S.D.

WHARTON COUNTY

Pure Oil Co.'s No. 2 Wallace Houston, 1,511 ft. SW, 466 ft. SE of N cor. of Wallace Houston 160-ac. tract, in the T. W. Heard Sur. No. 28, Abst. 509.... Drlg. 3,073 ft.

Pure Oil Co.'s No. 2 Stewart, Morris & Cummings Sur., Sec. 25, 990 ft. out of SW cor. of 160 acres ..... T.D. 7,892 ft.; washing down.

SOUTH LOUISIANA

ACADIA PARISH

Edwards Drlg. Co.'s No. 1 Daigle, NE cor. of SE of Sec. 24-7s-1e ..... T.D. 1,350 ft.; W.O.C.

Rhodes Drlg. Co.'s No. 1 Latrell ..... S.D. 2,280 ft.

AVOYELLES PARISH

Hass & Stokes' No. 1 Hass, from NE cor. SE Sec. 28 go along E line of Sec. 28 2,486 ft. to point on highway, thence 84° E on highway for 336 ft., thence N 37° E for 4,420 ft., then N 45° E 226 ft.... Rigging up.

BEAUREGARD PARISH

Federal Pet. Co.'s No. 1 Lutcher-Moore, 467 ft. S and 467 ft. E of the NW cor. of Sec. 4-6-12 ..... Drlg. hard sand 5,500 ft.

Federal Pet. Co.'s No. 1-B Lutcher Moore, 6 miles NW of No. 1 Lutcher Moore and near Fields ..... Location.

F. W. Martin's No. 1 J. E. Cochran, SE cor. of NE of Sec. 34-4s-12w (W part of county and 6 miles S of Merryville) ..... T.D. 5,018 ft.; shale; S.D.

CALCASIEU PARISH

Fred Oil Co.'s No. 1 Faizet, 566 ft. N, 300 ft. W of SE cor. of NW of SE Sec. 26-8s-10w ..... T.D. 2,868 ft.; D.S. test at 2,300 ft. S.W. and small amount gas.

Steinberger Pet. Co.'s No. 1 Drew, 330 ft. out of NW cor. of NE¼ of Sec. 26-10s-11w, 6½ miles SW of Sulphur ..... Location.

Union Sulphur Co.'s No. 2 Barbe, 279 ft. S and 350 ft. W of NE cor. of SE of Sec. 11-9s-8w ..... Drlg. shale 4,098 ft.

CAMERON PARISH

Southern Sulphur Oil Corp.'s No. 1 Gulf of Mexico, near the mouth of the Calcasieu River ..... Drlg. gumbo 3,230 ft.

IBERIA PARISH

Y. D. Spell's No. 1 Bernard, 5,138 ft. SW cor. along western boundary line, then in NE direction 1,140 ft. along N line of Bernard land, 52 ft. S of well in Sec. 54-13s-7e ..... T.D. 3,791 ft.; S.D.

IBERVILLE PARISH

Gross Pet.'s No. 1 Angelloz ..... T.D. 2,270 ft.; fishing.

JEFFERSON DAVIS PARISH

Humble O. & R. Co.'s No. 3 Devilbiss, 1,399 ft. W, 466 ft. S of NE cor. Sec. 14-9s-4w ..... Drlg. 217 ft.

Shell Pet. Corp.'s No. 1 Jernigan, 330 ft. E, 660 ft. S, NW cor. Sec. 12-9s-4w ..... Drlg. sticky shale 1,038 ft.

Tide Water Oil Co.'s No. 1 Mrs. A. Bourgeois, 250 ft. E and 205 ft. S of C of Sec. 28-9s-5w ..... T.D. 5,213 ft.; P.B. to 4,100 ft.; pulled D.S. in two.

LAFOURCHE PARISH

Barnsdall Oil Co.'s No. 2 Harang Plantation ..... T.D. 7,216 ft.; S.D.

R. L. Gay, trustee's No. 1 Godchaux, 3,920 ft. N and 1,746 ft. E in common cor. of Lots 34 and 26, Twp. 15s-19e ..... Drlg. gumbo 1,317 ft.

Southern Sulphur Corp.'s No. 1 D. L. Lagraize, 800 ft. E of NW cor. of Lot 7, thence 350 ft. S of Sec. 26-21s-22e ..... Spudded and S.D.

PLAQUEMINES PARISH

Southern Sulphur Oil Co.'s No. 1 Bay Adams, 2,325 ft. W and 826 ft. S of NE cor. of Sec. 23-20s-28e ..... T.D. 725 ft.; S.D.

Venice Corp.'s No. 1 Burras ..... T.D. 200 ft.; W.O.C.

ST. BERNARD PARISH

Joe Danciger's No. 1 Delacroix Land Fur Co., 2,442 ft. W and 660 ft. N of SE cor. of Sec. 127-14s-14e ..... Location.

Southern Sulphur Oil Co.'s No. 1 State-Lake Borgne, 850 ft. N and 220 ft. E of SE cor. of Sec. 33-12s-15e .... Drlg. shale 1,475 ft.

Southern Sulphur Corp.'s No. 1 Lake Lery, 400 ft. W. 500 ft. N. SW cor. Sec. 28-13s-15e ..... Drlg. shale 2,751 ft.

ST. LANDRY PARISH

Bailey Gaunce's No. 1 Lewis, 300 ft N and E of SW cor. of NW of NE of Section 29-5s-6e (workover) ... T.D. 5,017 ft.; S.D.

H. H. Hotchins Lbr. Co.'s No. 1 Whiteman Lbr. Co., 250 ft. out of SW cor. NE Sec. 15-5s-6e ..... S.D. 3,696 ft.

ST. MARTIN PARISH

Texas Co.'s No. 6 St. Martin Land Co., 660 ft. S and 500 ft. W of NE cor. SE Sec. 17-8s-7 ..... Drlg. shale 6,418 ft.

ST. MARYS PARISH

Black et al and Edwards Drlg. Co.'s No. 1 Chetimancha, Sec. 34-13s-9e, 219-acre tract approximately 500 ft. at right angles SE and SW lines of tract ..... T.D. 6,501 ft.; S.D.

TERREBONNE PARISH

Texas Co.'s No. 1-B State-Bay Junop, 2,200 ft. N, 950 ft. E of SW cor. Sec. 27-21s-14e ..... Drlg. shale 6,823 ft.

Texas Co.'s No. 13 State-Caillou Island, 500 ft. SW of No. 11 ..... Rigging up.

Texas Co.'s No. 11 Lake Pelto, 1,600 ft. SW of No. 8 ... Driving piling.

Texas Co.'s No. 3 School Board, 2,630 ft. S and 1,384 ft. E of NW cor. of Sec. 16-22s-18w ..... Rigging up.

VERNON PARISH

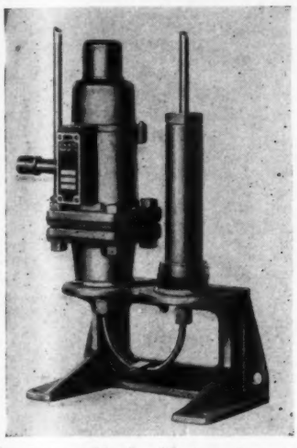
Anderson & Kerr Drlg. Co.'s No. 1 Nona Mills, 330 ft. S and W of NE cor. of Sec. 25-2n-9w ..... Location.

Robt. K. Williams, Jr.'s No. 1 Llano Del Rio, 1,185 ft. S, 1,000 ft. W of NE cor. Sec. 7-1n-9w ..... Rigged up and S.D.

NEW AND IMPROVED EQUIPMENT

Easy to Clean and Change Range of New Meter Body

The Brown Instrument Co., of Philadelphia, Pa., announces a new meter body for electric flow meters. It is designed for measuring the flow of any liquid, vapor or gas creating a differential pressure across an orifice of 1.6 to 16 inches of mercury. The outstanding features are ease of cleaning and range



changing, combined with ruggedness and simplicity.

A seamless steel U tube with union compression fittings connects the high and low pressure chambers. A mercury drain mounted on this tube has a hardened needle-point screw, which seals the mercury drain hole in the U tube. Mercury cannot be blown out of this meter body under severe overload or reverse flow conditions. Two highly resiliant seals of an oil-resisting material, seat firmly in the high-pressure chamber, one seal on top of the float, one underneath.

As the mercury level rises and falls with flow changes, the float in the high-pressure chamber is free to move and accurately follows the mercury level. There are no pressure bearings to leak; no gears, links or chains to wear or break; and no electric contacts to foul in mercury. Movement of the float is transmitted electrically to the indicating or recording meter by the inductance bridge principle (a patented feature of Brown electric flow meters).

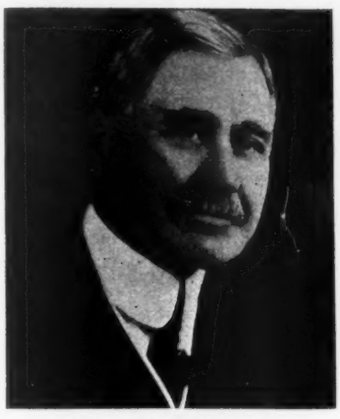
The base is interchangeable for wall or floor mounting and made of malleable iron to stand shocks on severe applications. All parts and fittings mounted on the base are open and easily reached with a wrench. The entire meter body can be taken apart, cleaned, and reassembled in less than an hour, without removing the piping, disturbing the setting or re-calibrating the meter.

UNION'S MEXICAN DISTRIBUTOR

The Sabalo Transportation Co., of Tampico, Mexico, has been appointed by Union Wire Rope Corp. as distributor for the states of Vera Cruz and Tamaulipas. The Sabalo company is headed by Sam Katz, president, and Mourice Katz, secretary, in charge of Union sales. Both are well known in Mexican business circles. The company is receiving the cooperation of Senor Enrique O. Chapa, Union's representative in Mexico.

V. A. Cosler, rubber technologist, has become associated with the rubber chemicals division of E. I. du Pont de Nemours & Co., according to E. R. Bridgewater, manager of the division.

Men Well Known in the Equipment Field

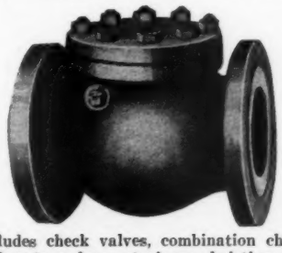


A. L. HUMPHREY

A. L. Humphrey, recently made a director of the Westinghouse Electric & Manufacturing Co., was born in Buffalo, N. Y., and attended high school there. He became a machinist apprentice. Advancing to superintendent of motive power, he served with the Union Pacific, Southern Pacific, Atchison, Topeka & Santa Fe, Colorado, Midland, Colorado Southern and Chicago & Alton Railroads. In 1903 he was appointed eastern manager of the Westinghouse Air Brake Co., and two years later was appointed general manager of the company. In 1910 he was appointed vice president and since 1919 has been president. He is chairman of the board of the Westinghouse Air Brake Co., American Brake Co., National Brake & Electric Co., Safety Car Devices Co. He is chariman of the executive committee of Pittsburgh Aviation Industries Corp., and a director in a group of important organizations.

WHEATLEY CHECK VALVES

Wheatley Brothers are manufacturing in the plant in Tulsa a line of equipment for pipe lines and refineries which



includes check valves, combination check and gate valves, strainers, hoisting tripods, welding clamps, saddle clamps, tapping and plugging machines, portable pumping units, etc.

Wheatley check valves are made of selected alloys. They are furnished with screwed, flanged or combination connections, in all sizes. The design allows clearance for scraper. Wheatley check valves are built for pressure to 2,000 pounds.

Wheatley products are sold through Mid-Continent Supply Co. stores. Complete stocks of check valves and other items are carried at Houston, Kilgore, Conroe and Fort Worth, Tex. Sales offices are at Tulsa and at 923 Shell Building, Houston, Tex.

Bucyrus-Erie Excavator Is Adaptable for Many Duties

The new 10-B three-eighths yard excavator, announced by Bucyrus-Erie Co., South Milwaukee, Wis., has wide application in the oil and gas industry. Fully and quickly convertible, it is offered with all types of front end equipment as a shovel, dragline, crane, clamshell, drag shovel, skimmer scoop, backfiller, or pile driver.

This ready convertibility of the 10-B in the field fits the requirements of pipe line work, including both grading and laying pipe. It is useful also in material handling and construction work, drainage, and building of dikes for safety basins.

Full-revolving, the 10-B offers practical working ranges. The shovel with standard boom at 45 degrees has a maximum cutting radius of 20 feet 3 inches, a clear dumping height of 12 feet 6 inches. The crane rating at 10 feet, radius is quoted at 7,000 pounds. Dragline and clamshell easily handle a three-eighths yard bucket on a 28-foot boom.

The machine weighs only 7½ to 8 tons, depending on the equipment, an important feature for those who must move their machines over highways. This

light weight and the compactness of the machine have been achieved by utilizing high-quality, heat-treated, modern alloy steels with welded construction and simplified design, so that the strength and dependability of a heavier machine are attained.

Speeds to 4¼ miles per hour are available. The machine steers accurately through friction clutches as readily as a tractor, making long, short or right-angle turns. It easily climbs grades even steeper than 30 per cent. It has a tail swing of only 5 feet 7 inches. This makes it particularly suited for work in close quarters.

A new general-purpose coupling is the subject of a publication, "Type WH Flexible Couplings," obtainable from the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa. These couplings are designed for use with gearmotors, speed-reducers and other industrial drives.

Completion of Two Giant Go-Devils Is Announced

The Washington Engine & Pump Co., Washington, Pa., announces the completion of two giant-size Northrup go-devil line pipe scrapers, so far as is known the largest ever built.

In the illustration the go-devil on the

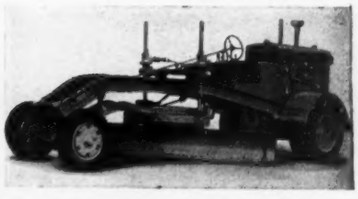
right is the 18-inch standard size, heretofore the largest. In the center is a new 20-inch machine, and on the left the giant of them all, a 24-inch go-devil just completed.

Posed atop of the 24-inch machine is a 2-inch Northrup go-devil, the original size from which larger and larger pipe line scrapers have been developed.

With the completion of the 20-inch and 24-inch tools, there is now available a go-devil for every pipe size from 2 inches to 2 feet in diameter. From 6-inch up all go-devils are equipped with the new Northrup heavy-duty deep-cut double guide wheel assembly.

Economy and Efficiency Combined in Auto Patrol

The "Caterpillar" Diesel auto patrol brings together the economy of the Diesel engine and the efficiency of a leading road maintenance machine, according to an announcement by the manufacturers,



Caterpillar Tractor Co., of Peoria, Ill. Neither unit is new, as the 3-cylinder, 4-cycle Diesel engine has seen service in hundreds of Diesel 35 tractors and power units, and the auto patrol has been popular for road maintenance and oil-mix work since it was introduced nearly three years ago.

Among the features claimed for the Diesel auto patrol are fuel economy, increased power, greater capacity, heavier frame, additional weight, and greater lugging ability. Full power control of all blade adjustments, rear-mounted engine, positive drive to dual rear wheels, elimination of the differential, four forward speeds ranging from 1.8 to 10 miles per hour, heavy structural steel circle and extra wide 12-foot blade equipped with end bits, adapt the machine to all kinds of maintenance work, including regrading and snow plowing, as well as many surfacing jobs.

La.-Ark. Wildcats

(Continued from Page 74)

SABINE PARISH

J. F. Anderson's No. 1 Burkett, 135 ft. N, 655 ft. E, SW cor. NW Sec. 10-9-13.
W.O.S.R. 1,993 ft.

J. W. Bettis et al's No. 1 Frost Lbr. Inc., 330 ft. S and W, NE cor. SW Sec. 15-9-13.
Rig abd.

R. B. Campbell et al's No. 1 Cook Land Co., 150 ft. N, 300 ft. W, SE cor. NW NW Sec. 35-10-12.
W.O. csg. 1,586 ft.

G. H. Collins' No. 1 Bellieu & Carter, 320 ft. S and W, NE cor. NW SW Sec. 21-9-13.
Set 7-in. 1,515 ft.

De Generes et al's No. 3 Crawford, 330 ft. N and E, SW cor. NW NE Sec. 20-9-13.
Testing 1,690 ft.

Earl P. Halliburton's No. 2 Barr, 330 ft. S, 390 ft. E, NW cor. Sec. 15-9-13.
Comp. pumping 20 bbls., 2,016 ft.

Helena O. & G. Co.'s No. 6 Burkett, 330 ft. S and E, NW cor. NE Sec. 10-9-13.
Tested dry 1,989 ft.

Lamson-Leavell & Bryant's No. 1 Bank of Pleasant Hill, Sec. 29-9-13.
Set 10-in. 40 ft.; drlg. 1,070 ft.

Zan Lloyd's No. 1 Henderson, 330 ft. N and W, C Sec. 29-9-13.
W.O.S.R. 2,031 ft.

H. C. Maulding's No. 2 Alford, 330 ft. N and E, SW cor. NW NW Sec. 18-7-10.
W.O.S.R. 2,750 ft.

Dr. O. B. Hicks' No. 1 Neal, SE SW SE Sec. 18-9-12.
Set 10-in. 40 ft.

Geo. L. Pace's No. 1 DeSoto Corp., 330 ft. N and E, SW cor. NE SE Sec. 27-10-13.
Set 10-in. 45 ft.; set 8-in. 1,713 ft.

L. L. Posey's No. 3 Burkett, 330 ft. S and E, NW cor. NE NW Sec. 10-9-13.
W.O.S.R. 1,984 ft.

Preston & Stinron's No. 1 Slay, 660 ft. W, 330 ft. N, SE cor. NW SE.
Comp. flowing 285 bbls., 1,995 ft.

W. H. Rowe et al's No. 1 Craig, 330 ft. S and E of C Sec. 22-9-13.
S.D. 1,200 ft.

J. A. Stinson's No. 1 Whitney Corp., 330 ft. S and W, NE cor. Sec. 8-9-13.
W.O.S.R. 2,014 ft.

Stumpff & McFall's No. 1 Paul estate, Sec. 10-9-13.
Tested S.W.; S.O. 1,976 ft.

Windsor Oil Co.'s No. 2 Barr, 330 ft. N and E, SW cor. NW Sec. 15-9-13.
Location abd.

RAPIDES PARISH

Ben Banner's No. 1 Bentley Lbr. Co., 2,640 ft. E, NW cor. Sec. 11-4n-5w.
S.D. 2,150 ft.

Evans & Collingsworth's No. 1 Hickman, 330 ft. S and E, NW cor. Sec. 40-4-1e.
S.D. 2,130 ft.

ARKANSAS

COLUMBIA COUNTY

O. F. Whittaker's No. 1 Hall, C SE NE Sec. 10-15-20.
Coring 2,078 ft.

CONWAY COUNTY

Sou. Union Gas Co.'s No. 1 Feldman, C SW SW Sec. 6-5n-17w.
S.D. for wtr. 2,865 ft.

HEMPSTEAD COUNTY

A. H. Bagnelle's No. 1 Trattner & Rhinehart, Sec. 2-13-26.
S.D. 1,992 ft.

LAFAYETTE COUNTY

Douglas Lawn's No. 1 Camp, 330 ft. S and W, NE cor. SW SE Sec. 14-15-23.
Drlg. 1,792 ft.

Earl F. Fox's No. 1 Coleman Bros., 330 ft. N and W, SE cor. NW NE Sec. 36-16-25.
Rigging up.

C. V. Lenz' No. 1 Foster, 330 ft. S, 150 ft. E, C Sec. 9-15-25.
Coring 2,802 ft.

LEE COUNTY

Ark.-La. P. L. Co.'s No. 1 McDonald, 1,500 ft. N, 370 ft. E, SW cor. Sec. 28-1n-4e.
Rigging up.

MILLER COUNTY

Fitzwater et al's No. 1 Norson, SW cor. SE SW Sec. 20-15-27.
S.D. 3,177 ft.

King Oil Corp.'s No. 1 C. H. Schroder, 200 ft. N, 330 ft. E, SW cor. SW NE Sec. 24-14-28.
S.D. 2,000 ft.

W. F. Lacey's No. 1 Gibson, 330 ft. S and E, NW cor. SW NW Sec. 30-19-27.
Drlg. 2,600 ft.

Magnolia Pet. Co.'s No. 3 Olivet, 250 ft. S, 160 ft. E, NW cor. NE NE Sec. 4-16-26.
Rigging up.

C. E. Murdock's No. 2 E. L. Beck, 330 ft. N and W, SE cor. Sec. 33-15-26.
Set 10-in. 182 ft.; drlg. 1,685 ft.

C. E. Murdock's No. 1 E. L. Beck, 330 ft. N and E, SW cor. SE SE Sec. 33-15-26.
W.O.S.R. 2,929 ft.

Texarkana Oil Corp.'s No. 1 H. E. Beck, 330 ft. N and E, SW cor. SW SW Sec. 34-15-26.
Comp. pumping 300 bbls., 2,923 ft.

Lee Timberlake et al's No. 1 E. L. Beck, 150 ft. N and E, SW cor. NW SE Sec. 33-15-26.
Drlg. 2,512 ft.

J. K. Wadley's No. 1 Deckerman, 200 ft. N, 330 ft. E, SW cor. NW Sec. 24-17-27.
Dry and abd. 4,502 ft.

John Wrather's No. 1 Olivet, 809 ft. S, 150 ft. E, NW cor. NE.
Set 12-in. 289 ft.; drlg. 2,215 ft.

E. L. Young, tr.'s No. 1 Patterson, SE cor. SE NE Sec. 5-19-28.
Csg. collapsed 2,406 ft.; T.D. 3,655 ft

OUACHITA COUNTY

F. A. Book et al's No. 1 Arnold, Sec. 24-15-16.
Set 10-in. 152 ft.

L. L. McDonald's No. 1 J. A. Robertson, 200 ft. S and E, NW cor. NE NW Sec. 25-15-16.
Comp. pumping 20 bbls., 2,131 ft.

L. L. McDonald's No. 1 Arnold & Doyle, 150 ft. N and W, SE cor. NE SW Sec. 23-15-16.
W.O.S.R. 2,131 ft.

UNION COUNTY

E. R. Henderson's No. 1 Vines, 330 ft. N and W, SE cor. SW SE Sec. 29-18-14.
P.B. to 2,161 ft.

Mrs. R. K. Jones et al's No. 1 J. Davis, 330 ft. N and W, SE cor. NW NW Sec. 28-16-14.
Arranging to test 2,615 ft.

McCreslenn Oil Co.'s No. 2 Atkins, 330 ft. S and W, NE cor. SW NE Sec. 3-18-13.
Coring 3,563 ft.

Tubal Pet. Co.'s No. 1 Gaddy, 340 ft. N and E, SW cor. SE NW Sec. 14-17-14
S.D.; W.O. 3,416 ft.

MISSISSIPPI

FRANKLIN COUNTY

E. R. Ratcliff's No. 1 Banks, SE cor. SE Sec. 20-5n-2e.
Coring 3,260 ft.

GREENE COUNTY

United Gas Public Service Co.'s No. 1 Davis, C NW Sec. 30-1n-5w.
Coring 6,670 ft.

ISSAQUENA COUNTY

Pelican Oil & Gasoline Co.'s No. 1 Steel Bayou Corp., 400 ft. N, 350 ft. E, SW cor. NW Sec. 14-12n-8w.
Drlg. 1,975 ft.

SIMPSON COUNTY

Berry Corp.'s No. 2 R. T. Berry, Sec. 33-2n-4e.
Drlg. 1,050 ft.

Perkins & Dees' No. 1 Lee, 1,500 ft. S, 500 ft. N, SW cor. Sec. 33-15n-8w.
Drlg. 150 ft.

WALTHALL COUNTY

Mutual O. & G. Co.'s No. 1 Boyd, SW cor. SW SE Sec. 24-2n-9e.
Moving in rig.

WARREN COUNTY

Orbet Drlg. Co.'s No. 1 R. L. Parker, 300 ft. E, CWL Sec. 14-14-1e.
S.D. 3,169 ft.

La.-Ark. Proven Fields

NORTH LOUISIANA

CADDO—RODESSA

United Gas Pub. Ser. Co.'s No. 1 Deer, 1,320 ft. N and W, SE cor. Sec. 28-23-16.
Coring 5,786 ft.

SABINE PARISH—ZWOLLE

Alexander & Cane's No. 1 Fogman, SE cor. N½ SW NE Sec. 18-7-11.
S.D. 1,100 ft.

Ivan A. Allen's No. 1 La. Long Leaf, 330 ft. N and W, SE cor. NW SE Sec. 12-7-11.
S.D. 750 ft.

Dyer et al's No. 1 McCollister, 330 ft. S and E, NW cor. SW NE Sec. 24-7-12.
S.D. 1,100 ft.

Foster & Hartman's No. 1 Bowman-Hicks, 330 ft. S and E, NW cor. NE Sec. 10-7-12.
Drlg. 2,575 ft.

E. D. Holcomb's No. 1 Porter, 330 ft. S, 330 ft. W, NE cor. SE Sec. 7-7-11.
W.O.S.R. 2,580 ft.

M. J. Kissick's No. 1 Sermon, 388 ft. N. 606 ft. E, SW cor. SW SE Sec. 11-4-13.
Set 10-in. 146 ft.

M. J. Kissick's No. 1 Barr, 350 ft. S and W, NE cor. SW SE Sec. 6-4-11.
S.D. 3,800 ft.

H. C. Maulding's No. 2 DeLatin, 330 ft. S and E, NW cor. NE SE Sec. 3-7-11.
Rigging up.

Monroe Prod. Co.'s No. 6 Sabine Lbr. Co., 330 ft. N and E, SW cor. SE NE Sec. 12-7-12.
Set 10-in. 60 ft.

Geo. L. Pace's No. 5 Greer, 330 ft. S and E, NW cor. Sec. 32-3-11.
Comp. pumping 20 bbls., 2,400 ft.

Geo. L. Pace's No. 1 Garner, 330 ft. N and W, SE cor. SW NE Sec. 15-7-11.
W.O.S.R. 2,591 ft.

Pelican Nat. Gas Co.'s No. 29 4-L Co., Sec. 29-8-11.
Tested dry; W.O. 2,660 ft.

Pelican Nat. Gas Co.'s No. 32 La. Long Leaf, 314 ft. S, 35 ft. W, NE cor. W½ NW Sec. 31-8-11.
Used acid 2,575 ft.

Tarver & Bauer's No. 1 Barthold, 330 ft. N and W, SE cor. SW SE Sec. 25-8-12.
Set 10-in. 60 ft.; drlg. 1,834 ft.

Texas Co.'s No. 1 Billbray, 330 ft. N and E, SW cor. NW NE Sec. 32-8-11.
Set 10-in. 86 ft.; set 6-in. 2,218 ft.

Tex.-La.-Ark. Oil Co.'s No. 1 Pickering Lbr. Co., Sec. 3-3-12.
S.D. 1,590 ft.

EAST TEXAS (BORDER COUNTIES)

CASS COUNTY

United Gas Public Service Co.'s No. 1 Walton, John Coleman Sur.
Drlg. 3,750 ft.

R. K. Kamon et al's No. 1 Savage, Mary Patterson Sur.
Tested dry 3,815 ft.

HARRISON COUNTY

R. C. Payne et al's No. 1 Lowery, E. D. Spain Sur.
S.D. 4,003 ft.

PANOLA COUNTY

Acre & Rotunda's No. 1 Burnett Lbr. Co., J. H. Mallory Sur.
Reaming 2,057 ft.

Givens & Holloway's No. 1 Wooten est., Winnie Mann Sur.
S.D. 750 ft.

R. W. Price's No. 1 Crawford, J. A. Williams Sur.
Rigging up.

SHELBY COUNTY

Bush Oil Int.'s No. 1 Windham, W. M. Blackburn Sur.
S.D. 3,366 ft.

C. E. Litchfield's No. 1 Windham, A. H. English Sur.
Drlg. 2,560 ft.

Turner & Neil's No. 1 Pickering Lbr. Co., P. W. Harvey Sur.
Set 10-in. 65 ft.

LONE STAR DIVIDEND

PITTSBURGH, Pa., June 18.—The Lone Star Gas Corp. has omitted the dividend on the common stock due at this time. The company has been paying 16 cents per quarter in 6 per cent convertible preference stock. A statement issued in connection with the dividend omission says this was done "with the hope that should the indicated trend of earnings continue during the next few months, a resumption of cash dividends will be justified."

Lone Star Gas Corp. reports for fo months ended April 30, 1934, surplu after taxes, charges and preferred di idends of $2,608,126 available for co mon stock. This is equivalent to 48 cen a share on 5,451,056 no-par shares common stock and compares with $2,45 559, or 46 cents a share, on common first four months of 1933.

Lone Star Gas Corp. declared the re ular quarterly dividend of $1.50 on t preferred stock, payable June 30 to sto of record June 15.

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Royalties—Production

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A New Woodbine Sand Field Cher kee County, East Texas opened up fe days ago, leases advanced $1,000 an ac few days' time. Extensions this new fie also areas likely open up shortly, yo might make 50 for 1 on. E. CROF PROCTOR, TEXAS.

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Russell Co., Kans. NW¼ 24-13-14 tw miles from three 1,000 barrel wells. Mc Dougall, 3026 NW 14th Ave., Miami, Fla

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